Indiana Department of Environmental Management 401 Water Quality Certification Application

I-69 Evansville to Indianapolis Project
Section 1
I-64/SR 57 Interchange to SR 64
Located in Vanderburgh, Gibson and Warrick Counties, Indiana

DES# 0300377

Date: September 13, 2007

Prepared For:

Indiana Department of Transportation
Environmental Assessment Section
Environment, Planning and Engineering Division
Government Building North, Room N642
100 North Senate Avenue
Indianapolis, Indiana 46204-2249

Prepared By:
Bernardin, Lochmueller and Associates, Inc.
6200 Vogel Road
Evansville, Indiana 47715



Application for Authorization to Discharge Dredged or Fill Material to Isolated Wetlands and/or Waters of the State

State Form 51821 (R / 10-04)

Indiana Department of Environmental Management

- INSTRUCTIONS: 1. Read the instruction sheet before filling out this form.
 - 2. You must complete all applicable sections of this form

1. Applicant	t Information	2. Agent I	nformation			
Name of Applicant:		Name of Agent:				
Mailing address: (Street/ PO Box/ Ru	iral Route, City, State, ZIP Code)	Mailing address: (Street/ PO Box/ Ru	ral Route, City, State, ZIP Code)			
Daytime Telephone Number:		Daytime Telephone Number:				
Fax Number:		Fax Number:				
E-mail address: (optional)		E-mail address: (optional)				
Contact person: (required)		Contact person:				
	2 Drainat	Tract Leastion				
County:	3. Project/	Tract Location Nearest city or town:				
U.S.G.S. Quadrangle map name (To	opographic map):	Project street address (if applicable)	:			
Quarter:	Section:	Township:	Range:			
Type of aquatic resource(s) to be important of the control of the		Project name or title: (if applicable)				
	ject Purpose and Descript	ion (Use additional sheet(s) if re c	quired)			
Has any construction been started? Yes No		Anticipated start date:				
If yes, how much work is completed?						
Purpose of project and overview of a	ctivities:					

5. Avoidance, Minimization, and Mitigation Information: Applicants must answer all of the following questions (Use additional sheet(s) if necessary - provide a detailed response to all applicable questions). A. For projects with Class II isolated wetlands -1. Is there a reasonable alternative to the proposed activity? 2. Is the proposed activity reasonably necessary or appropriate? B. For projects with Class III wetlands, adjacent wetlands, and/or streams, rivers, lakes or other water bodies -1. Is there a practicable alternative to the proposed activity? 2. Have practicable and appropriate steps to minimize impacts to water resources been taken? Describe all compensatory mitigation required for unavoidable impacts.

6. Drawing/Plan Requirements (applicants must provide the following)

- a. Top/aerial/overhead views of the project site showing existing conditions and proposed construction. See Attachments #5 and #6
- b. Cross sectional view of areas of fill or alterations to streams and other waters. See Attachment #9
- c. North arrow, scale, property boundaries. See Attachment #10
- d. Include wetland delineation boundary (if applicable). Label all wetlands (jurisdictional, isolated and exempt) as I-1, I-2, I-3, etc. and the mitigation areas as M-1, M-2, etc. See Attachment #7 and #8
- e. Location of all surface waters, including wetlands, erosion control measures, existing and proposed structures, fill and excavation locations, disposal area for excavated material, including quantities, and wetland mitigation site (if applicable). See Attachments #11
- f. Approximate water depths and bottom configurations (if applicable).

7. Supplemental Application Materials (applicants must provide the following)

- a. A wetland delineation of all wetlands on the project site (for projects with wetland impacts). See Attachment #8
- b. At least three photographs of the project site. Indicate the photo locations on the project plans. See Attachment #7
- c. If isolated wetlands are present, a letter from the Corps of Engineers verifying this statement. See Attachment #12
- d. Wetland mitigation plan and monitoring report. See Attachment #13
- e. Classification of all isolated wetlands on the tract (if isolated wetlands are present onsite).
- f. Copies of all applicable local permits and/or resolutions pertaining to the project or tract.
- g. Tract history (see instructions).

8. Additional information that MAY be required (IDEM will notify you if needed)

- a. Erosion control and/or storm water management plans.
- b. Sediment analysis.
- c. Species surveys for fish, mussels, plants and threatened or endangered species.
- d. Stream habitat assessment. See Attachment #14
- e. Any other information IDEM deems necessary to review the proposed project. Attachment #15

9. Permitting Requirements

a. Does this project require the issuance of a Department of the Army Section 404 Permit from the US Army Corps of Engineers?	Yes	No
If no, you do not need to answer Part b.		

b. Have you applied for an Army Corps of Engineers Section 404 permit? Yes No

If yes, please supply the Corps of Engineers ID Number, the Corps of Engineers District, the project manager, and a copy of any correspondence with the Corps. If no, contact the Army Corps of Engineers regarding the possible need for a permit application.

c. Have you applied for, received, or been denied a permit from the Department of Natural Resources for this project? Yes No Please give the permit name, permit number, and date of application, issance or denial..

d. Have you applied for, received, or been denied any other federal, state, or local permits, variances, licenses, or certifications for this project?

Yes

No

Please give the permit name, agency from which it was obtained, permit number, and date of issuance or denial.

List the names and addresses of persons (or entities) potentially a	f landowners	adjacent to the property on v	Owners and Addresses which your project is located and the leet(s) if required.	names and a	ddresses of other
Name			Name		
Address			Address		
City	State	ZIP Code	City	State	ZIP Code
Name			Name		
Address			Address		
City	State	ZIP Code	City	State	ZIP Code
Name			Name		
Address			Address		
City	State	ZIP Code	City	State	ZIP Code
Name			Name		
Address			Address		
City	State	ZIP Code	City	State	ZIP Code
Name			Name		
Address			Address		
City	State	ZIP Code	City	State	ZIP Code
Name			Name		
Address			Address		
City	State	ZIP Code	City	State	ZIP Code

11. Signature - Statement of Affirmation

I certify that I am familiar with the information contained in this application and, to the best of my knowledge and belief, such information is true and accurate. I certify that I have the authority to undertake and will undertake the activities as described in this application. I am aware that there are penalties for submitting false information. I understand that any changes in project design subsequent to IDEM's granting of authorization to discharge to a water of the state are not authorized and I may be subject to civil and criminal penalties for proceeding without proper authorization. I agree to allow representatives of the IDEM to enter and inspect the project site. I understand that the granting of other permits by local, state, or federal agencies does not release me from the requirement of obtaining the authorization requested herein before commencing the project.

Applicant's Signature:

Date: 9/14/67

Print Name: Richard C. Ph. Habaum Title: Environcet Permit

Worksheet – Summary of Onsite Water Resources and Project Impacts

Wetlan	J. T		0:	(Existing Conditions)	To be			nds (Proposed Impacts	
	атуре		51	ze of wetland (acreage)	Impacte	d?	Acreage	Fill quantity (cys)	AT
EM	SS	FO			Yes	No			
EM	SS	FO			Yes	No			
EM	SS	FO			Yes	No			
EM	SS	FO			Yes	No			
EM	SS	FO			Yes	No			
EM	SS	FO			Yes	No			
EM	SS	FO			Yes	No			
escribe the t	ype and	compositi	on and	quantity (cubic yards) of materia	I proposed to	be dred	dged or excavate	d from wetlands on the project	site:
		W 41							
			dS (E	xisting Conditions)	To be			s (Proposed Impacts)	
Wetland Cla	ISS	Туре		Size of wetland (acreage)	Impacte	d?	Acreage	Fill quantity (cys)	A1
1 2	3	NF	F		Yes	No			
		N.I.	F		Voo	No			
1 2	3	NF	- +		Yes	-110			
1 2	3	NF	F		Yes	No			
1 2	3	NF	F		Yes	No			
1 2 1 2	3	NF NF	F		Yes Yes	No No			
1 2 1 2 1 2 1 2	3 3 3	NF NF NF	F F F	Il material to be placed in isolated	Yes Yes Yes Yes	No No No	ject site:		
1 2 1 2 1 2 1 2 0 Describe the t	3 3 3 ype and	NF NF NF compositi	F F F on of f		Yes Yes Yes Yes d wetlands on	No No No No the pro		ed from isolated wetlands on the	e proje
1 2 1 2 1 2 1 2 Describe the t	3 3 3 ype and	NF NF NF compositi	F F F on of f	Il material to be placed in isolated	Yes Yes Yes Yes d wetlands on	No No No No the pro		ed from isolated wetlands on the	e projec
1 2 1 2 1 2 1 2 Describe the t	3 3 3 ype and	NF NF NF compositi	F F F on of f		Yes Yes Yes Yes d wetlands on	No No No No the pro		ed from isolated wetlands on the	e projec
1 2 1 2 1 2 1 2 Describe the total	3 3 3 ype and	NF NF Compositi	F F F on of fi		Yes Yes Yes Yes d wetlands on	No No No No the pro	dged or excavate		
1 2 1 2 1 2 1 2 Describe the total	3 3 3 ype and	NF NF NF compositi	F F F on of fi	l quantity (cubic yards) of materia	Yes Yes Yes Yes d wetlands on	No No No No the pro	dged or excavate		
1 2 1 2 1 2 1 2 Describe the total	3 3 3 ype and ype and s and S	NF NF NF compositi	F F on of fi	quantity (cubic yards) of materia	Yes Yes Yes Yes d wetlands on	No No No the pro the drece	dged or excavate		
1 2 1 2 1 2 1 2 Describe the total described the total description of the total description description of the total description of the total description description of the total description de	3 3 3 ype and ype and impacts	NF NF NF compositi	F F F on of fi	l quantity (cubic yards) of materia	Yes Yes Yes Yes d wetlands on	No No No No the pro the drece Riginal	dged or excavate		

Area of coverage:

Bank protection fill placed below the Ordinary High Water Mark:

D. Bank Stabilization – provide the following information for EACH segment (Use additional sheet(s) if required)
Water body name:
Description of impacts:
Length of shoreline or bank protection:
Volume (cubic yards) of bank protection fill placed below the Ordinary High Water Mark per running foot:
Area (square feet) of bank protection fill placed below the Ordinary High Water Mark:
E. Stream Relocation
Water body name:
Description of impacts:
Length of existing channel to be relocated: (linear feet)
Length of new channel to be constructed: (linear feet)
Existing channel to be backfilled: Type of relocation:
Yes No Piping Open Channel Other:
Type of fill and volume: (cubic yards)
F. Open Water Fill
Water body name:
Description of impacts:
Area of water body to be filled: (acres)

Type of fill and volume: (cubic yards)

Notes and Instructions for Authorization to Discharge Dredged or Fill Material to a State Regulated Wetland and/or Waters of the State Permit Application Form and Worksheet

Note to applicants:

This form is to be used by all persons who intend to discharge dredged or fill materials into wetlands, isolated wetlands, or any other water body regulated under state and federal law. Specifically, this form is to be used for the following:

- 1. Application for Section 401 Water Quality Certification for any project not covered by the Indiana Regional General Permit
- 2. Application for a State Regulated Wetland Permit authorized under HEA 1798 and HEA 1277, excluding any activities authorized under any of the State Regulated Wetland General Permits

Consult the Office of Water Quality Web site for information on the types of authorizations and requirements for projects regulated under these laws "

http://www.in.gov/idem/water/planbr/401/401home.html

Do not submit this form until you are familiar with the various authorizations and proper forms for obtaining these authorizations. An application submitted on the incorrect form may result in delays in processing.

Applicants should also contact the Indiana Department of Natural Resources (DNR) regarding potential permit requirements associated with construction in a floodway or a public freshwater lake. You can reach the DNR Division of Water at (317) 232-4160 or toll free at (877) WATER-55.

Instructions for Completing the Application and Worksheet

Address all applications or questions to:

Indiana Department of Environmental Management
Office of Water Quality
Section 401 Water Quality Certification/State Isolated Wetlands Program
100 North Senate
Indianapolis, Indiana 46204

Telephone: (800) 451-6027 or (317) 233-8488

Print clearly or type
Attach additional 8.5" x 11" sheets as necessary

APPLICATION

Note: Some wetland activities may impact both U.S. navigable waters and state regulated isolated wetlands. In those situations, the project will require a Section 401 Water Quality Certification and Section 404 U.S. Corps of Engineers permit AND approval under the new State Isolated Wetland Regulatory Program. When IDEM receives an application that involves an activity that may impact both intrastate navigable waters and a state regulated wetland, current state law requires that we evaluate each activity using different authorities. IDEM will, at the request of an applicant, evaluate a project with multi-jurisdictional wetlands under the Section 401 certification framework and will provide one authorization for the project, applying the state regulated isolated wetlands law and federal Clean Water Act Section 401 authorities. If an applicant prefers that all IDEM approvals occur within one streamlined review process, a separate letter specifically requesting a combined review of the entire project should be submitted concurrently with the application.

Block 1 - Applicant Information

Provide your name, address, and telephone number. You MUST provide a contact name. For complex projects or projects with multiple contractors and responsible parties, designation of a single point of contact will speed up the review process and enable more timely responses to requests for information.

Block 2 - Agent Information

If you choose to be represented by an agent, provide the agent™s address and telephone information. You are not required to have an agent.

Block 3 - Project Location

Provide specific information relating to the location of your proposed project. Provide accurate maps depicting the project location. Try to keep detail on maps to a minimum, focusing instead on the location of structures and associated water bodies. Consult the USGS Quadrangle maps for information on the quarter, section, township and range of the project. IDEM may require that you submit full size plans to supplement the 8 1/2" by 11" map sheets if the project is large or complex.

Block 4 - Project Purpose and Description

Provide the proposed or actual start date and the anticipated completion date. If you have started your project before obtaining authorization, you may be in violation of federal and/or state law. Give a narrative description of the proposed project. You should include any supplemental environmental reports, assessments, or other documents that explain or justify the proposed configuration of the project. Describe the purpose of the project (that is, what goal oroutcome will be met by the construction of the project).

Block 5 - Avoidance, Minimization, and Mitigation Information

You must describe possible alternatives to the proposed project that would avoid impacts to the aquatic resource that were considered during the project planning process. You must also describe ways to minimize impacts considered during the project planning process, including a description of how you plan to contain any dredged/excavated material to prevent re-entry into waterways or wetlands. Examples of alternatives include construction on the upland portions of the property; rerouting a roadway to avoid a wetland; or alternate design plans. Minimization of the impacts may decrease any mitigation requirements that might otherwise apply. Minimization may include reduction of the amount of dredging, filling, or vegetative clearing. For isolated wetlands only, enclosure of a copy of (1) a resolution of the executive of the county or municipality in which the wetland is located or (2) a permit or other approval from a local government entity having authority over the proposed use of the property on which the wetland is located; that includes a specific finding that the wetland activity is part of a legitimate use proposed by the applicant on the property, substitutes for the information required on avoidance and minimization.

Answer all the questions in detail, providing example, drawings, or other supporting information to illustrate the steps taken to consider alternatives. Provide reasons why various alternatives were or were not considered.

In general, all impacts to wetlands or other waters that require the use of this form will require some form of compensatory mitigation. A detailed description ofthe mitigation plan must be provided, including: the location of the mitigation site, the size and type of mitigation to be performed, the construction sequence ortiming of the mitigation, information on post construction monitoring, mitigation techniques, and success criteria of the mitigation site. A mitigation plan, with overview drawings, planting lists, cross sectional views, and other relevant information is recommended as a supplement to answer this question.

Block 6 - Drawing/Plan Requirements

You must submit drawings/plans that are on 8 1/2 by 11 inch sheets. Your project will be delayed if these materials are not submitted in the formats specified in the application.

Block 7 "Supplemental Application Materials

All projects involving impacts to wetlands must be accompanied by a wetland delineation using the procedures established in the U.S. Army Corps of EngineersWetland Delineation Manual, Technical Report Y-87-1 (January 1987). This delineation must be approved or reviewed by the Corps of Engineers in order for IDEM to determine the impacts to water bodies associated with the project. DO NOT submit an application involving impacts to wetlands without a wetland delineation. For projects that involve impacts to isolated wetlands, a letter from the Corps of Engineers that specifically makes this determination must be provided or the application will not be processed. Submittal of photographs depicting the project site is highly encouraged. Photos must be clearly labeled with the direction of the shot, the area depicted, and notes on relevant features. A map depicting the location of photos on the project site is also useful and should be included whenever photos are submitted.

For project sites with isolated wetlands, a tract history is also required. This history provides information on all the wetlands on the site prior to January 1, 2004, and describes any and all activities within these wetlands, including impacts allowed to wetlands exempt from regulation under the various provisions of federal and state law. Direct questions regarding this requirement to IDEM staff for clarification.

Block 8 - Additional Information That May Be Required

You are not required to submit the information specified in this section unless directed to do so by IDEM. However, you may submit the information if you anticipate that such information will be required. For example, if you are aware of issues on the proposed project site which may impact water resources, such as the presence of contaminated soils or sediments, endangered species, well field protection areas, or previously permitted activities on the project site, information regarding these points must be submitted with the certification application.

Block 9 - Permitting Requirements

Provide information regarding your application to the Corps of Engineers. If you have not yet contacted the Corps of Engineers, you must do so as soon as possible (SEE BLOCK 7). Provide information regarding any other federal, state, or local permits, variances, licenses, or certifications required for your project. Please indicate whether they were approved, denied, or are pending.

Block 10 - Adjoining Property Owners and Addresses

List the names and addresses of landowners adjacent to the property on which your project is located. Adjacent property owners are persons who share property lines with your property. Inclusion of names and addresses of other persons (or entities) potentially affected by your project must include persons within your neighborhood, lake association, or in the general vicinity that may have an interest in your project. Consult with IDEM for further clarification.

Block 11 - Signature - Statement of Affirmation

You must sign and date the application. If the applicant is a corporation, a responsible person from that corporation must sign. No other signatures will be accepted. The application will not be processed without the appropriate signature.

WORKSHEET

Note: When calculating any type of impact, all areas that are affected by placement of fill, bank armoring, culverting, excavation, or any other activity must be counted. When calculating open water impact, all areas within lakes, rivers, streams and the like must be counted. This includes areas under new bridge piers, beaches, and boat ramps, as examples. The Ordinary High Water Mark means that line on the shore of a water body established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, natural destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

- Fill out only the sections of this worksheet that apply to your project -

Section A - Wetlands

This section is for wetlands determined to be under the jurisdiction of the U.S. Army Corps of Engineers (Corps) and that require a Section 404 permit as well as a Section 401 Water Quality Certification from IDEM. List the type of wetland as Emergent (EM), Scrub shrub (SS), or Forested (FO). "Emergent wetland" means a wetland characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. "Scrub shrub wetland" means a wetland dominated by woody vegetation having a height greater than three and two-tenths (3.2) feet, and a stem diameter less than three (3) inches. This includes true shrubs, young trees, and trees and shrubs stunted by environmental conditions. œForested wetland•means a wetland dominated by woody vegetation that has a diameter, at breast height, greater than three (3) inches, regardless of total height. The size of the wetland must be determined by conducting a wetland delineation consistent with the protocols established in the U.S. Army Corps of Engineers 1987 Wetland Delineation Manual. The applicant must list whether or not the wetland will be impacted, the acreage of the impact, and the quantity of fill to be discharged into the wetland. The applicant must identify whether or not this is an after-the-fact (ATF) permit. An ATF permit is for impacts to wetlands or other water bodies under the jurisdiction of IDEM that did not receive authorization before the impacts occurred. Additionally, the applicant must describe the type and composition of material proposed to be discharged or removed from the wetland.

Section B - Isolated Wetlands

This section is for wetlands the Corps has determined to be isolated and no longer under their jurisdiction. The Corps jurisdictional determination letter must be included with the application. Isolated wetlands are considered State Regulated Wetlands and proposed impacts to these wetlands will be reviewed pursuant to IC 13-18-22. The class of wetland must be determined by the definitions outlined in IC-13-11-2-25.8. This is determined by assessing the vegetation type, hydrologic function, habitat functions, values of the wetland, and disturbances to the wetland. The applicant must determine the type of wetland by designating the wetland as either Non-Forested (NF) or Forested (F). The size of the wetland must be determined by conducting a wetland delineation consistent with the protocols established in the U.S. Army Corps of Engineers 1987 Wetland Delineation Manual. The applicant must list whether or not the wetland will be

impacted, the acreage of the impact, and the quantity of fill to be discharged into the wetland. The applicant must identify whether or not this is an after-the-fact (ATF) permit. An ATF permit is for impacts to wetlands or other water bodies under the jurisdiction of IDEM that did not receive authorization before the impacts occurred. Additionally, the applicant must describe the type and composition of material proposed to be discharged or removed from the wetland.

Section C - Bridges and Stream Crossings

This section is for projects that impact streams in order to construct, maintain, or protect structures used to cross the stream. The applicant must list the name of the stream to be impacted by the proposed project. The stream name can be found on the USGS Topographic map. If the stream does not have a name, identify it as a tributary to the next stream or water body with a name. Describe the proposed impacts in detail. Include the lengths of bank impacts to both banks upstream and downstream. Determination of left and right banks is made in the following manner- at the point furthest upstream on the project site, face downstream - the left bank is on your left and the right bank is on your right. Identify the volume per running foot of material to be discharged below the Ordinary High Water Mark (OHWM). Identify the total area below the OHWM to receive a discharge of fill material.

Section D - Bank Stabilization

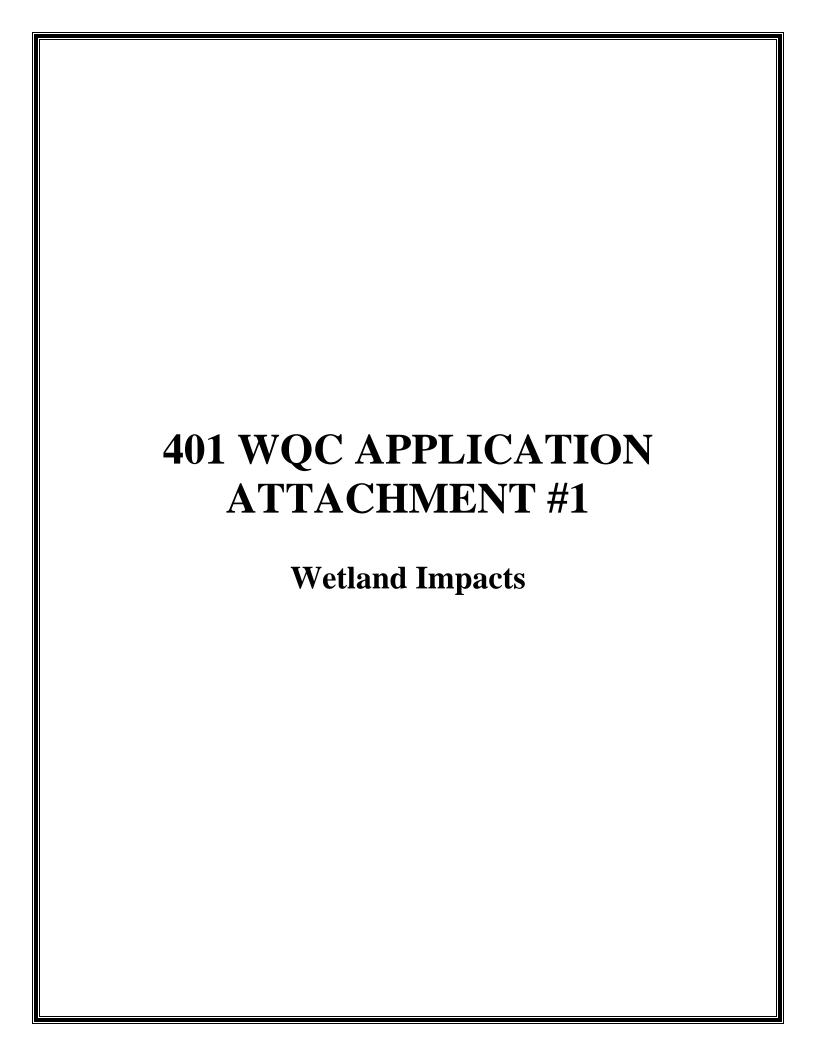
This section is for projects that discharge fill material in order to stabilize eroding land along streams, lakes, or other water bodies. The applicant must list thename of the water body to be impacted by the proposed project. The name of the water body can be found on the USGS Topographic map. If the water bodydoes not have a name, identify it as a tributary to the next stream or water body with a name. Provide the length of shoreline or bank impact. Identify the volume per running foot of material to be discharged below the Ordinary High Water Mark (OHWM). Identify the total area below the OHWM to receive a discharge of fill material.

Section E - Stream Relocation

This section is for projects that propose to relocate a stream from its existing banks either by open channel construction or by stream piping. The applicant must list the name of the stream to be impacted by the proposed project. The stream name can be found on the USGS Topographic map. If the stream does not have a name, identify it as a tributary to the next stream or water body with a name. Describe the impacts to the stream. Provide the linear feet of existing channel to be relocated and the length of new channel to be constructed. The applicant must state whether the old channel is proposed to be filled and describe the type and quantity of fill to be used to fill the old channel. The applicant must also provide the type of relocation "new channel or piping."

Section F - Open Water Fill

This is for projects where the fill material extends beyond the edge of the shoreline into open water. Some examples include the filling of pit mines, borrow pits, and other land reclamation projects. Provide the name of the water body to be impacted. If the water body does not have a name, identify it as unnamed open water body. Describe the impacts to the water body including the area to be filled and the type and quantity of fill material to be discharged.



Wetland Impact Areas

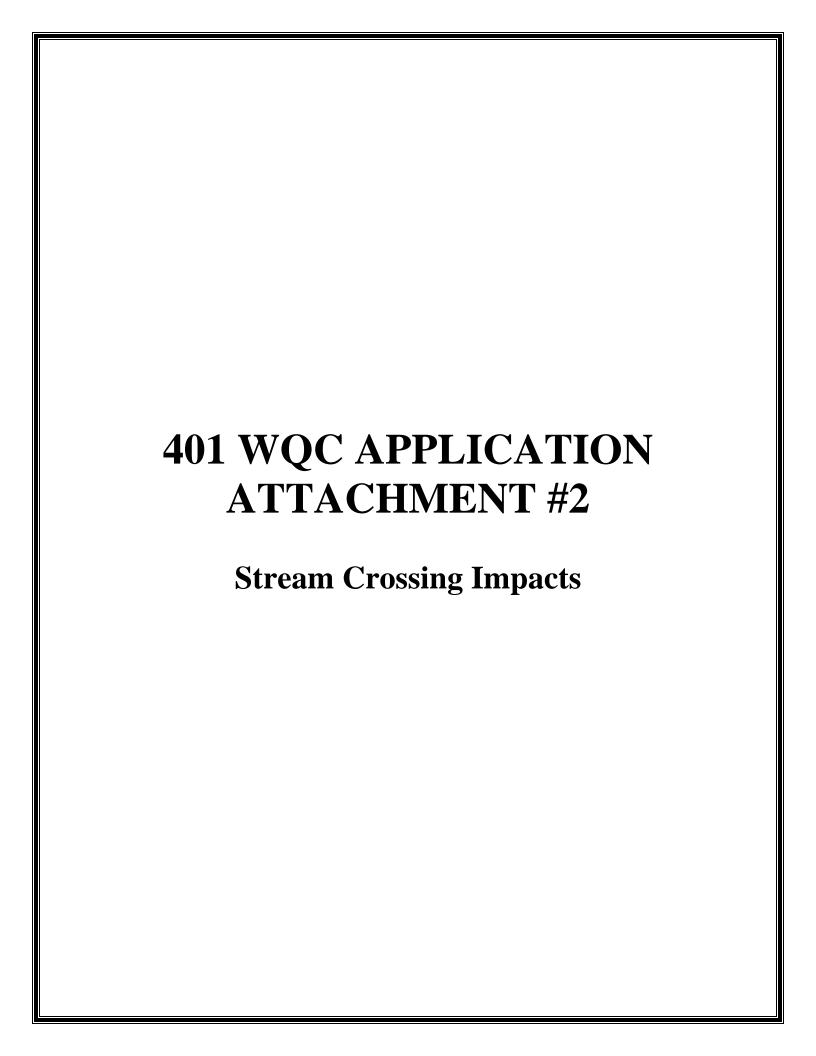
A. Jurisdictional V	Juriso	dictional Wet	ands (Proposed Impacts)		
Wetland Type	Size of wetland (acreage)	To be Impacted?	Acreage	Fill quantity (cys)	ATF
EM SS <u>X</u> _ FO	Wetland #1 – 0.06 acre	X_YesNo	0.02 ac	50 cys	
<u>X</u> _EMSSFO	Wetland #2 – 0.01 acre	X_YesNo	0.01 ac	31 cys	
<u>X</u> _EMSSFO	Wetland #3 – 0.23 acre	X_YesNo	0.14 ac	241 cys	
<u>X</u> _EMSSFO	Wetland #4 – 0.33 acre	X_YesNo	0.26 ac	2,870 cys	
<u>X</u> _EMSSFO	Wetland #5 – 0.07 acre	X_YesNo	0.07 ac	60 cys	
<u>X</u> _EMSSFO	Wetland #6 – 0.11 acre	<u>X</u> _ Yes No	0.06 ac	120 cys	
<u>X</u> _EMSSFO	Wetland #7 – 0.12 acre	X_Yes No	0.05 ac	50 cys	
<u>X</u> _EMSSFO	Wetland #8 – 0.19 acre	X_YesNo	0.16 ac	1,500 cys	
<u>X</u> _EMSSFO	Wetland #9 – 0.19 acre	X_YesNo	0.16 ac	1,500 cys	
<u>X</u> _EMSSFO	Wetland #10 – 0.09 acre	X_YesNo	0.09 ac	1,000 cys	
<u>X</u> _EMSSFO	Wetland #11 – 1.90 acres	X_YesNo	0.09 ac	1,200 cys	
<u>X</u> _EMSSFO	Wetland #12 – 0.07 acre	<u>X</u> _ Yes No	0.07 ac	950 cys	

Describe the type and composition of fill material to be placed in wetlands on the project site:

Earth embankment fill suitable for roadway construction will be placed into the wetland areas

Describe the type and composition and quantity (cubic yards) of material proposed to be dredged or excavated from wetlands on the project site:

No material is proposed to be dredged from these wetland areas.



C. Bridges and Streams Crossing – Provide the following i	information for EACH structure (Use additional sheet(s) if required)
Stream Name	
Barn Branch Creek – Stream Impact #1 (Stream ID Sec 1-s02r01)	
Description of Impacts	
125 feet of this stream will be placed into box culvert and 28 fe	eet on both ends of the culvert will receive riprap.
(Total Impact Below OHWM – 0.04 acre)	• •
Length of Upstream Impacts	
Left Side: 112 feet	Right Side: 112 feet
Length of Downstream Impacts	
Left Side: 69 feet	Right Side: 69 feet
Bank protection fill placed below the Ordinary High Water Mark:	
	Volume Per Running Foot: 0.44 cubic yards / linear foot
Bank protection fill placed below the Ordinary High Water Mark:	
	Area of Coverage: 1,232 square feet

C. Bridges and Streams Crossing – Provide the following	g information for EACH structure (Use additional sheet(s) if required)
Stream Name	
Tributary to Pigeon – Stream Impact #2 (Stream ID Sec 1-s04)	
Description of Impacts	
385 feet of this stream will be placed into a 3-sided box culv	ert and 21.5 feet on both ends of the culvert will receive riprap.
(Total Impacts Below OHWM – 0.05 acre)	
Length of Upstream Impacts	
Left Side: 214 feet	Right Side: 214 feet
Length of Downstream Impacts	
Left Side: 214 feet	Right Side: 214 feet
Bank protection fill placed below the Ordinary High Water Mark:	
	Volume Per Running Foot: 1.27 cubic yards / linear foot
Bank protection fill placed below the Ordinary High Water Mark:	
	Area of Coverage: 1,300 square feet

C. Bridges and Streams Crossin	g – Provide the following	information for EACH structure (Use additional sheet(s) if required)
Stream Name		
Tributary to Pigeon Creek - Stream Impac	#4 (Stream ID Sec 1-s07)	
Description of Impacts		
70 feet of this stream will be place	d into a concrete arch culv	ert and 28 feet on both ends of the culvert will receive riprap.
(Total Impacts Below OHWM – 0		
Length of Upstream Impacts		
	Left Side: 63 feet	Right Side: 63 feet
Length of Downstream Impacts		
	Left Side: 63 feet	Right Side: 63 feet
Bank protection fill placed below the Ordin	ary High Water Mark:	
		Volume Per Running Foot: 1.0 cubic yards / linear foot
Bank protection fill placed below the Ordin	ary High Water Mark:	
		Area of Coverage: 1,359 square feet

Stream Name	<u>-</u>
Barn Branch Creek – Stream Impact #5 (Stream ID Sec 1-s02r04)	
Description of Impacts	
84 feet of this stream will be placed into a 3-sided box culve	rt and 24.5 feet on both ends of the culvert will receive riprap
(Total Impacts Below OHWM – 0.02 acre)	
Length of Upstream Impacts	
Left Side: 66.5 feet	Right Side: 66.5 feet
Length of Downstream Impacts	
Left Side: 66.5 feet	Right Side: 66.5 feet
Bank protection fill placed below the Ordinary High Water Mark:	
	Volume Per Running Foot: 1.1 cubic yards / linear foot
Bank protection fill placed below the Ordinary High Water Mark:	
	Area of Coverage: 798 square feet

C. Bridges and Streams Crossing – Provide the following i	information for EACH structure (Use additional sheet(s) if required)
Stream Name	
Barn Branch Creek – Stream Impact #6 (Stream ID Sec 1-s02r04)	
Description of Impacts	
210 feet of this stream will be placed into a 3-side box culvert	and 460 feet of this stream will be regraded
(Total Impacts Below OHWM – 0.09 acre)	
Length of Upstream Impacts	
Left Side: 240 feet	Right Side: 240 feet
Length of Downstream Impacts	
Left Side: 430 feet	Right Side: 430 feet
Bank protection fill placed below the Ordinary High Water Mark:	
	Volume Per Running Foot: 1.6 cubic yard / linear foot
Bank protection fill placed below the Ordinary High Water Mark:	
	Area of Coverage: 11,237 square feet

C. Bridges and Streams Crossing – Provide the	ne following information for EACH structure (Use additional sheet(s) if required)
Stream Name	
Barn Branch Creek – Stream Impact #7 (Stream ID Sec 1-s0)	2r04)
Description of Impacts	
213 feet of this stream will be placed into a box	culvert and 43.5 feet on both ends of the culvert will receive riprap.
(Total Impacts Below OHWM – 0.04 acre)	1 1
Length of Upstream Impacts	
Left Side: 155	feet Right Side: 155 feet
Length of Downstream Impacts	
Left Side: 145	feet Right Side: 145 feet
Bank protection fill placed below the Ordinary High Water M	lark:
	Volume Per Running Foot: 1.6 cubic yards / linear foot
Bank protection fill placed below the Ordinary High Water M	lark:
	Area of Coverage: 1,800 square feet

C. Bridges and Streams Crossing -	Provide the following	information for EACH structure (Use additional sheet(s) if required)
Stream Name		
Tributary to Pigeon Creek - Stream Impact #8 (Stream ID Sec 1-s08)	
Description of Impacts		
354 feet of this stream will be placed in	nto a box culvert and 3	5 feet on both ends of the culvert will receive riprap.
(Total Impacts Below OHWM – 0.05		1 1
Length of Upstream Impacts		
Le	ft Side: 212 feet	Right Side: 212 feet
Length of Downstream Impacts		
Le	ft Side: 212 feet	Right Side: 212 feet
Bank protection fill placed below the Ordinary	High Water Mark:	•
		Volume Per Running Foot: 0.5 cubic yards / linear foot
Bank protection fill placed below the Ordinary	High Water Mark:	·
- ·	-	Area of Coverage: 2,120 square feet

C. Bridges and Streams Cro	ossing – Provide the following i	nformation for EACH structure (Use additional sheet(s) if required
Stream Name		
Tributary to Pigeon Creek - Stream I	mpact #9 (Stream ID Sec 1-s09)	
Description of Impacts		
315 feet of this stream will be	placed into a culvert and 35 feet	on both ends of the culvert will receiver riprap
(Total Impacts Below OHWM	1	1 1
Length of Upstream Impacts		
	Left Side: 192.5 feet	Right Side: 192.5 feet
Length of Downstream Impacts		
	Left Side: 192.5 feet	Right Side: 192.5 feet
Bank protection fill placed below the	Ordinary High Water Mark:	
		Volume Per Running Foot: 0.5 cubic yards / linear foot
Bank protection fill placed below the	Ordinary High Water Mark:	
		Area of Coverage: 1,925 square feet

C. Bridges and Streams Crossing – Provide the following	g information for EACH structure (Use additional sheet(s) if required)	
Stream Name		
Tributary to Pigeon Creek – Stream Impact #10 (Stream ID Sec 1-s10)		
Description of Impacts		
255 feet of this stream will be placed into a box culvert and 35 feet on both ends of the culvert will receive riprap.		
(Total Impacts Below OHWM – 0.01 acre)		
Length of Upstream Impacts		
Left Side: 162.5 feet	Right Side: 162.5 feet	
Length of Downstream Impacts		
Left Side: 162.5 feet	Right Side: 162.5 feet	
Bank protection fill placed below the Ordinary High Water Mark:		
	Volume Per Running Foot: 0.1 cubic yards / linear foot	
Bank protection fill placed below the Ordinary High Water Mark:		
	Area of Coverage: 325 square feet	

C. Bridges and Streams Crossing – Provide the following in	nformation for EACH structure (Use additional sheet(s) if required)
Stream Name	•
Tributary to Pigeon Creek – Stream Impact #11 (Stream ID Sec 1-s11)	
Description of Impacts	
460 feet of this stream will be crossed by two bridges on the in	terstate and one new bridge on CR 550. Riprap will be placed below the
bridges to prevent scouring and stream bank erosion (Total Imp	pact Below OHWM – 0.07 acre)
Length of Upstream Impacts	
Left Side: 230 feet	Right Side: 230 feet
Length of Downstream Impacts	
Left Side: 230 feet	Right Side: 230 feet
Bank protection fill placed below the Ordinary High Water Mark:	
	Volume Per Running Foot: 0.7 cubic yards / linear foot
Bank protection fill placed below the Ordinary High Water Mark:	
	Area of Coverage: 2,695 square feet

C. Bridges and Streams Crossing – Provide the fol	lowing information for EACH structure (Use additional sheet(s) if required)
Stream Name	
Pigeon Creek – Stream Impact #12 (Stream ID Sec 1-s12)	
Description of Impacts	
385 feet of this stream will be crossed by two bridges.	Riprap will be placed below the bridges to prevent scouring and stream bank
erosion (Total Impact Below the OHWM – 0.19 acre)	
Length of Upstream Impacts	
Left Side: 192.5 feet	Right Side: 192.5 feet
Length of Downstream Impacts	
Left Side: 192.5 feet	Right Side: 192.5 feet
Bank protection fill placed below the Ordinary High Water Mark:	
	Volume Per Running Foot: 1.6 cubic yards / linear foot
Bank protection fill placed below the Ordinary High Water Mark:	
	Area of Coverage: 8,085 square feet

C. Bridges and Streams Cr	ossing – Provide the following i	information for EACH structure (Use additional sheet(s) if required)	
Stream Name		· · · · · · · · · · · · · · · · · · ·	
Tributary to Pigeon Creek – Stream	Tributary to Pigeon Creek – Stream Impact #13 (Stream ID Sec 1-s13r02 and Sec 1-s13r01)		
Description of Impacts			
860 feet of this stream will be	860 feet of this stream will be placed into a box culvert and 35 feet on both ends of the culvert will receive riprap.		
(Total Impacts Below the OHWM – 0.17 acre)			
Length of Upstream Impacts			
	Left Side: 465 feet	Right Side: 465 feet	
Length of Downstream Impacts			
	Left Side: 465 feet	Right Side: 465 feet	
Bank protection fill placed below the	Ordinary High Water Mark:		
		Volume Per Running Foot: 0.7 cubic yards / linear foot	
Bank protection fill placed below the	Ordinary High Water Mark:		
		Area of Coverage: 7,440 square feet	

C. Bridges and Streams Crossing – Provide the followin	g information for EACH structure (Use additional sheet(s) if required)
Stream Name	
Tributary to Pigeon Creek – Stream Impact #14 (Stream ID Sec 1-s14)	
Description of Impacts	
470 feet of this stream will be placed into a box culvert and	35 feet on both ends of the culvert will receive riprap.
(Total Impacts Below the OHWM – 0.06 acre)	
Length of Upstream Impacts	
Left Side: 270 feet	Right Side: 270 feet
Length of Downstream Impacts	
Left Side: 270 feet	Right Side: 270 feet
Bank protection fill placed below the Ordinary High Water Mark:	
	Volume Per Running Foot: 0.7 cubic yards / linear foot
Bank protection fill placed below the Ordinary High Water Mark:	
	Area of Coverage: 2,700 square feet

C. Bridges and Streams Crossing – Provide the following in	nformation for EACH structure (Use additional sheet(s) if required)
Stream Name	
Tributary to Smith Creek – Stream Impact #15 (Stream ID Sec 1-s15r02)	
Description of Impacts	
380 feet of this stream will be crossed with two bridges on the	interstate. Riprap will be place below the bridges to prevent scouring
and stream bank erosion. (Total Impacts Below the OHWM –	
Length of Upstream Impacts	
Left Side: 190 feet	Right Side: 190 feet
Length of Downstream Impacts	
Left Side: 190 feet	Right Side: 190 feet
Bank protection fill placed below the Ordinary High Water Mark:	
	Volume Per Running Foot: 0.3 cubic yards / linear foot
Bank protection fill placed below the Ordinary High Water Mark:	
	Area of Coverage: 950 square feet

C. Bridges and Streams Cro	ossing – Provide the following in	nformation for EACH structure (Use additional sheet(s) if require
Stream Name		
Tributary of Smith Creek – Stream In	npact #16 (Stream ID Sec 1-s16r01)	
Description of Impacts		
495 feet of this stream will be	placed into a box culvert and 35 t	feet on both ends of the culvert will receive riprap.
(Total Impacts Below the OH)	WM – 0.10 acre)	
Length of Upstream Impacts		
	Left Side: 282.5 feet	Right Side: 282.5 feet
Length of Downstream Impacts		
	Left Side: 282.5 feet	Right Side: 282.5 feet
Bank protection fill placed below the	Ordinary High Water Mark:	
_		Volume Per Running Foot: 0.6 cubic yards / linear foot
Bank protection fill placed below the	Ordinary High Water Mark:	
		Area of Coverage: 2,119 square feet

C. Bridges and Streams Crossing – Provide the following info	ormation for EACH structure (Use additional sheet(s) if required)
Stream Name	•
Tributary of Smith Creek – Stream Impact #18 (Stream ID Sec 1-s18r01)	
Description of Impacts	
125 feet of this stream will be placed into a box culvert.	
(Total Impacts Below the OHWM – 0.01 acre)	
Length of Upstream Impacts	
Left Side: 62.5 feet	Right Side: 62.5 feet
Length of Downstream Impacts	
Left Side: 62.5 feet	Right Side: 62.5 feet
Bank protection fill placed below the Ordinary High Water Mark:	
	Volume Per Running Foot: 0.4 cubic yards / linear foot
Bank protection fill placed below the Ordinary High Water Mark:	
	Area of Coverage: 375 square feet

C. Bridges and Streams Cro	ssing – Provide the following in	formation for EACH structure (Use additional sheet(s) if required	
Stream Name			
Tributary of Smith Creek – Stream Im	Tributary of Smith Creek – Stream Impact #19 (Stream ID Sec 1-s18r02)		
Description of Impacts			
205 feet of this stream will be	205 feet of this stream will be placed into a box culvert and 35 feet on both ends of the culvert will receive riprap.		
(Total Impacts Below the OHWM – 0.02 acre)			
Length of Upstream Impacts			
	Left Side: 137.5 feet	Right Side: 137.5 feet	
Length of Downstream Impacts			
	Left Side: 137.5 feet	Right Side: 137.5 feet	
Bank protection fill placed below the	Ordinary High Water Mark:		
		Volume Per Running Foot: 0.4 cubic yards / linear foot	
Bank protection fill placed below the	Ordinary High Water Mark:		
_		Area of Coverage: 825 square feet	

C. Bridges and Streams Crossing – Provide the following information for EACH structure (Use additional sheet(s) if required)				
Stream Name	Stream Name			
Tributary to Smith Creek – Stream In	Tributary to Smith Creek – Stream Impact #21 (Stream ID Sec 1-s20r01 and Sec 1-s20r02)			
Description of Impacts				
685 feet of this stream will be	685 feet of this stream will be placed into a box culvert and 35 feet on both ends of the culvert will receive riprap.			
	(Total Impacts Below the OHWM – 0.17 acre)			
Length of Upstream Impacts				
	Left Side: 377.5 feet	Right Side: 377.5 feet		
Length of Downstream Impacts				
	Left Side: 377.5 feet	Right Side: 377.5 feet		
Bank protection fill placed below the	Ordinary High Water Mark:			
		Volume Per Running Foot: 0.9 cubic yards / linear foot		
Bank protection fill placed below the Ordinary High Water Mark:				
		Area of Coverage: 7,550 square feet		

	ng – Provide the following i	nformation for EACH structure (Use additional sheet(s) if requ	iired)
Stream Name			
Tributary to Smith Creek – Stream Impact	#24 (Stream ID Sec 1-s25r01)		
Description of Impacts			
590 feet of this stream will be pla	ced into a box culvert and 35	feet on both ends of the culvert will receive riprap.	
(Total Impacts Below the OHWM	I – 0.18 acre)	• •	
Length of Upstream Impacts			
	Left Side: 330 feet	Right Side: 330 feet	
Length of Downstream Impacts			
	Left Side: 330 feet	Right Side: 330 feet	
Bank protection fill placed below the Ordi	nary High Water Mark:		
		Volume Per Running Foot: 1.0 cubic yards / linear foot	
Bank protection fill placed below the Ordi	nary High Water Mark:		
		Area of Coverage: 7,920 square feet	

	Described to College	'. C C E. C
Stream Name	ng – Provide the following	g information for EACH structure (Use additional sheet(s) if required
Halfmoon Ditch – Stream Impact #25 (Str	eam ID Sec 1-s27)	
Description of Impacts		
380 feet of this stream will be pla	ced into a box culvert and 3	35 feet on both ends of the culvert will receive riprap.
(Total Impacts Below the OHWM	I – 0.12 acre)	
Length of Upstream Impacts		
	Left Side: 225 feet	Right Side: 225 feet
Length of Downstream Impacts		
	Left Side: 225 feet	Right Side: 225 feet
Bank protection fill placed below the Ordi	nary High Water Mark:	
		Volume Per Running Foot: 1.0 cubic yards / linear foot
Bank protection fill placed below the Ordi	nary High Water Mark:	
		Area of Coverage: 5,400 square feet

C. Bridges and Streams Cros	sing – Provide the following in	formation for EACH structure (Use additional sheet(s) if required	
Stream Name			
Tributary to Halfmoon Ditch – Stream l	Tributary to Halfmoon Ditch – Stream Impact #27 (Stream ID Sec 1-s30r03)		
Description of Impacts			
395 feet of this stream will be p	laced into a box culvert and 35 f	eet on both ends of the culvert will receive riprap.	
(Total Impacts Below the OHW	M - 0.13 acre)		
Length of Upstream Impacts			
	Left Side: 232.5 feet	Right Side: 232.5 feet	
Length of Downstream Impacts			
	Left Side: 232.5 feet	Right Side: 232.5 feet	
Bank protection fill placed below the O	rdinary High Water Mark:		
		Volume Per Running Foot: 1.0 cubic yards / linear foot	
Bank protection fill placed below the O	rdinary High Water Mark:		
		Area of Coverage: 5,580 square feet	

C. Bridges and Streams Crossing – Provide the following information for EACH structure (Use additional sheet(s) if required)				
Stream Name	Stream Name			
Tributary to Halfmoon Ditch - Strea	m Impact #28 (Stream ID Sec 1-s31)			
Description of Impacts	-			
845 feet of this stream will be	e placed into a box culvert and 35	feet on both ends of the culvert will receive riprap.		
(Total Impacts Below the OH		1 1		
Length of Upstream Impacts				
	Left Side: 457.5 feet	Right Side: 457.5 feet		
Length of Downstream Impacts				
	Left Side: 457.5 feet	Right Side: 457.5 feet		
Bank protection fill placed below the	Ordinary High Water Mark:			
		Volume Per Running Foot: 0.4 cubic yards / linear foot		
Bank protection fill placed below the Ordinary High Water Mark:				
		Area of Coverage: 3,660 square feet		

-	ing – Provide the following i	nformation for EACH structure (Use additional sheet(s) if required
Stream Name		
Tributary of West Fork Keg Creek – Stre	am Impact #30 (Stream ID Sec 1-s35	
Description of Impacts		
190 feet of this stream will be pl	aced into a box culvert and 35	feet on the west end of the culvert will receive riprap.
(Total Impacts Below the OHW)	M – 0.01 acre)	
Length of Upstream Impacts		
	Left Side: 130 feet	Right Side: 130 feet
Length of Downstream Impacts		
	Left Side: 130 feet	Right Side: 130 feet
Bank protection fill placed below the Ore	linary High Water Mark:	
•	•	Volume Per Running Foot: 0.2 cubic yards / linear foot
Bank protection fill placed below the Ore	linary High Water Mark:	·
		Area of Coverage: 520 square feet

Stream Name		
Tributary to West Fork Keg Creek - Str	eam Impact #31 (Stream ID Sec 1-s36	5r02)
Description of Impacts		
66 feet of this stream will be pla	ced into a box culvert	
(Total Impacts Below the OHW	M - 0.01 acre)	
Length of Upstream Impacts		
	Left Side: 33 feet	Right Side: 33 feet
Length of Downstream Impacts		
	Left Side: 33 feet	Right Side: 33 feet
Bank protection fill placed below the Or	dinary High Water Mark:	
		Volume Per Running Foot: 0.2 cubic yards / linear foot
Bank protection fill placed below the Or	dinary High Water Mark:	
		Area of Coverage: 132 square feet

C. Bridges and Streams Cross	sing – Provide the following in	iformation for EACH structure (Use additional sheet(s) if required
Stream Name		
Tributary to West Fork Keg Creek – Str	eam Impact #32 (Stream ID Sec 1-s36r	01)
Description of Impacts		
155 feet of this stream will be p	laced into a box culvert and 35 f	feet on the east end will receive riprap.
(Total Impacts Below the OHW	M – 0.01 acre)	
Length of Upstream Impacts		
	Left Side: 112.5 feet	Right Side: 112.5 feet
Length of Downstream Impacts		
	Left Side: 112.5 feet	Right Side: 112.5 feet
Bank protection fill placed below the Or	dinary High Water Mark:	
		Volume Per Running Foot: 0.2 cubic yards / linear foot
Bank protection fill placed below the Or	dinary High Water Mark:	
		Area of Coverage: 450 square feet

C. Bridges and Streams Cro	ssing – Provide the following in	nformation for EACH structure (Use additional sheet(s) if required)
Stream Name	G	· · · · · · · · · · · · · · · · · · ·
Tributary to West Fork Keg Creek – S	tream Impact #33 (Stream ID Sec 1-s37)	
Description of Impacts		
425 feet of this stream will be	placed into a box culvert and 35 f	feet on both ends of the culvert will receive riprap.
(Total Impacts Below the OHV	VM – 0.01 acre)	• •
Length of Upstream Impacts		
	Left Side: 247.5 feet	Right Side: 247.5 feet
Length of Downstream Impacts		
	Left Side: 247.5 feet	Right Side: 247.5 feet
Bank protection fill placed below the 0	Ordinary High Water Mark:	
-		Volume Per Running Foot: 0.1 cubic yards / linear foot
Bank protection fill placed below the 0	Ordinary High Water Mark:	
		Area of Coverage: 495 square feet

C. Bridges and Streams Crossing – Provide the following	information for EACH structure (Use additional sheet(s) if required)
Stream Name	
West Fork Keg Creek – Stream Impact #34 (Stream ID Sec 1-s39)	
Description of Impacts	
385 feet of this stream will be crossed with two bridges on the	e interstate. Riprap will be placed below the bridges to prevent scouring
and stream bank erosion. (Total Impacts Below the OHWM -	
Length of Upstream Impacts	
Left Side: 192.5 feet	Right Side: 192.5 feet
Length of Downstream Impacts	
Left Side: 192.5 feet	Right Side: 192.5 feet
Bank protection fill placed below the Ordinary High Water Mark:	
	Volume Per Running Foot: 0.8 cubic yards / linear foot
Bank protection fill placed below the Ordinary High Water Mark:	
	Area of Coverage: 3,465 square feet

C. Bridges and Streams Crossing – Provide the following	information for EACH structure (Use additional sheet(s) if required)			
Stream Name	Stream Name			
Tributary to West Fork Keg Creek – Stream Impact #35 (Stream ID Sec 1-s4	4)			
Description of Impacts				
315 feet of this stream will be placed into a box culvert and 33	5 feet on both ends of the culvert will receive riprap.			
(Total Impacts Below the OHWM -0.03 acre)				
Length of Upstream Impacts				
Left Side: 192.5 feet	Right Side: 192.5 feet			
Length of Downstream Impacts				
Left Side: 192.5 feet	Right Side: 192.5 feet			
Bank protection fill placed below the Ordinary High Water Mark:				
	Volume Per Running Foot: 0.2 cubic yards / linear foot			
Bank protection fill placed below the Ordinary High Water Mark:				
	Area of Coverage: 1,155 square feet			

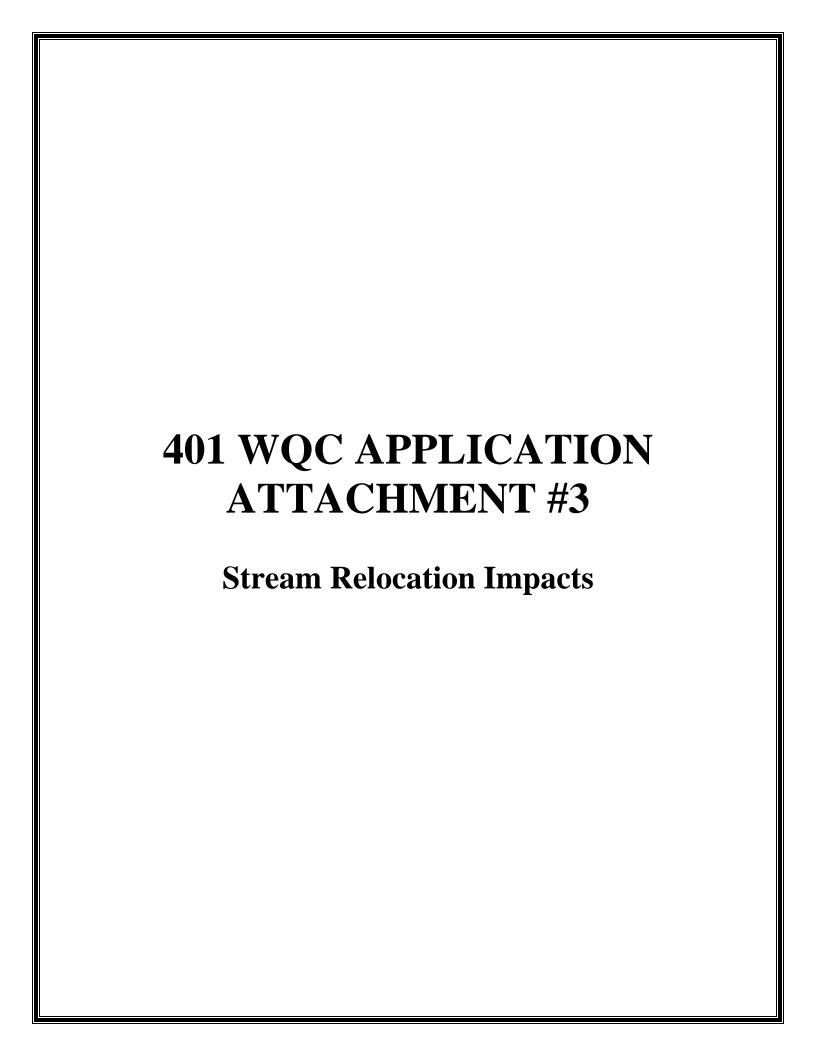
C. Bridges and Streams Cros	sing – Provide the following in	formation for EACH structure (Use additional sheet(s) if required	
Stream Name			
Tributary to West Fork Keg Creek – Str	ream Impact #36 (Stream ID Sec 1-s41)		
Description of Impacts			
315 feet of this stream will be p	laced into a box culvert and 35 f	eet on both ends of the culvert will receive riprap.	
(Total Impacts Below the OHWM – 0.03 acre)			
Length of Upstream Impacts			
	Left Side: 192.5 feet	Right Side: 192.5 feet	
Length of Downstream Impacts			
Left Side: 192.5 feet Right Side: 192.5 feet			
Bank protection fill placed below the O	rdinary High Water Mark:		
		Volume Per Running Foot: 0.2 cubic yards / linear foot	
Bank protection fill placed below the O	rdinary High Water Mark:		
		Area of Coverage: 1,155 square feet	

C. Bridges and Streams Cr	ossing – Provide the following in	nformation for EACH structure (Use additional sheet(s) if required)		
Stream Name	Stream Name			
Tributary of Smith Creek - Stream I	mpact #37 (Stream ID Sec 1-s42)			
Description of Impacts				
315 feet of this stream will be	e placed into a box culvert and 35	feet on both ends of the culvert will receive riprap.		
	(Total Impacts Below the OHWM -0.05 acre)			
Length of Upstream Impacts				
	Left Side: 192.5 feet	Right Side: 192.5 feet		
Length of Downstream Impacts				
	Left Side: 192.5 feet	Right Side: 192.5 feet		
Bank protection fill placed below the	e Ordinary High Water Mark:			
		Volume Per Running Foot: 0.5 cubic yards / linear foot		
Bank protection fill placed below the Ordinary High Water Mark:				
		Area of Coverage: 2,310 square feet		

C. Bridges and Streams Crossing – Provide the following information for EACH structure (Use additional sheet(s) if required)				
Stream Name				
Tributary to West Fork Keg Creek – Stream Impact #38 (Stream ID Sec 1-s43r01 and Sec 1-s43r02)				
Description of Impacts				
545 feet of this stream will be placed into a culvert and 35 feet on both ends of the culvert will receive riprap.				
(Total Impacts Below the OHWM – 0.08 acre)				
Length of Upstream Impacts				
	Left Side: 307.5 feet	Right Side: 307.5 feet		
Length of Downstream Impacts				
	Left Side: 307.5 feet	Right Side: 307.5 feet		
Bank protection fill placed below the	Ordinary High Water Mark:			
		Volume Per Running Foot: 0.4 cubic yards / linear foot		
Bank protection fill placed below the	Ordinary High Water Mark:			
		Area of Coverage: 3,690 square feet		

C. Bridges and Streams Crossing – Provide	he following information for EACH structure (Use additional sheet(s) if required)	
Stream Name	•	
West Fork Keg Creek – Stream Impact #39 (Stream ID S	I-s39r01)	
Description of Impacts		
385 feet of this stream will be crossed with a new bridge that will replace the existing bridge over W. Fork Keg Creek on SR 64.		
(Total Impacts Below the OHWM – 0.08 acre)		
Length of Upstream Impacts		
Left Side: 1	5 feet Right Side: 192.5 feet	
Length of Downstream Impacts		
Left Side: 1	5 feet Right Side: 192.5 feet	
Bank protection fill placed below the Ordinary High Water	Mark:	
	Volume Per Running Foot: 0.8 cubic yards / linear foot	
Bank protection fill placed below the Ordinary High Water	Mark:	
	Area of Coverage: 3,465 square feet	

C. Bridges and Streams Crossing – Provide the following information for EACH structure (Use additional sheet(s) if required)		
Stream Name		
West Fork Keg Creek – Stream Impa	act #40 (Stream ID Sec 1-s39r01)	
Description of Impacts		
110 feet of this stream will be placed into a culvert and 35 feet on both ends of the culvert will receive riprap.		
(Total Impacts Below the OHWM – 0.04 acre)		
Length of Upstream Impacts		
	Left Side: 90 feet	Right Side: 90 feet
Length of Downstream Impacts		
	Left Side: 90 feet	Right Side: 90 feet
Bank protection fill placed below the	e Ordinary High Water Mark:	
		Volume Per Running Foot: 0.8 cubic yards / linear foot
Bank protection fill placed below the	Ordinary High Water Mark:	
		Area of Coverage: 1,620 square feet



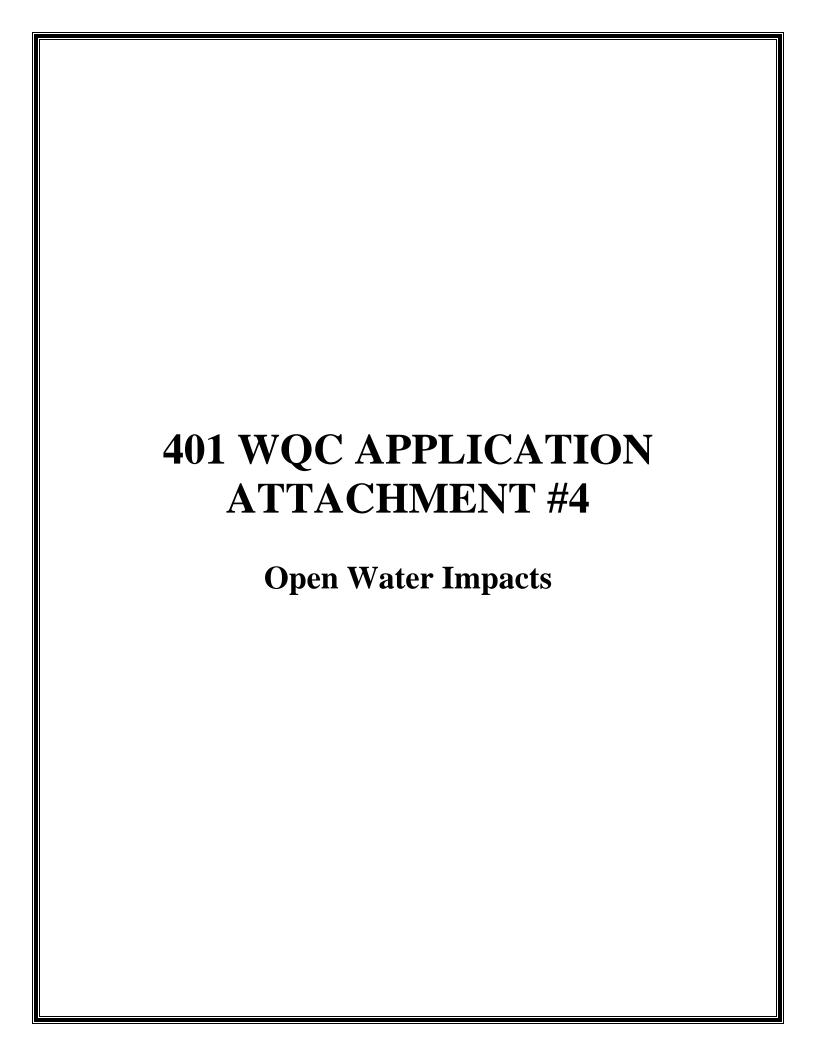
Stream Relocation Impacts

E. Stream	Relocation	
Water body name:		
Barn Branch Creek – Stream Impact #3 (Stream ID Sec 1-s04)		
Description of impacts:		
Approximately 400 feet of this stream (acting as a roadsid	le ditch) will be relocated approximately 25 feet north	
Length of existing channel to be relocated: (linear feet)		
400 feet		
Length of new channel to be constructed: (linear feet)		
400 feet	I.m	
Existing channel to be backfilled: X Yes No	Type of relocation: Piping _X Open Channel Other	
Type of fill and volume: (cubic yards)		
Earth embankment fill suitable for roadway construction ((126 cubic yards)	
E. Stream	Relocation	
Water body name:		
Tributary to Smith Creek – Stream Impact #17 (Stream II) Sec 1-s17)	
Description of impacts:		
70 feet of this stream will be relocated into a roadside dito	eh	
Length of existing channel to be relocated: (linear feet)		
70 feet Length of new channel to be constructed: (linear feet)		
80 feet		
Existing channel to be backfilled:	Type of relocation:	
<u>X</u> Yes <u>No</u>	Piping _X Open Channel Other	
Type of fill and volume: (cubic yards)		
Earth embankment material will be used to fill in the char	nnel (67 cubic yards)	
	Relocation	
Water body name:		
Water body name: Tributary to Smith Creek – Stream Impact #20 (Stream II		
Water body name: Tributary to Smith Creek – Stream Impact #20 (Stream III) Description of impacts:) Sec 1-s19)	
Water body name: Tributary to Smith Creek – Stream Impact #20 (Stream ID Description of impacts: 395 feet of this stream will be relocated into a roadside did) Sec 1-s19)	
Water body name: Tributary to Smith Creek – Stream Impact #20 (Stream II Description of impacts: 395 feet of this stream will be relocated into a roadside did Length of existing channel to be relocated: (linear feet)) Sec 1-s19)	
Water body name: Tributary to Smith Creek – Stream Impact #20 (Stream II) Description of impacts: 395 feet of this stream will be relocated into a roadside di Length of existing channel to be relocated: (linear feet) 395 feet) Sec 1-s19)	
Water body name: Tributary to Smith Creek – Stream Impact #20 (Stream III) Description of impacts: 395 feet of this stream will be relocated into a roadside directly Length of existing channel to be relocated: (linear feet) 395 feet Length of new channel to be constructed: (linear feet)) Sec 1-s19)	
Water body name: Tributary to Smith Creek – Stream Impact #20 (Stream II) Description of impacts: 395 feet of this stream will be relocated into a roadside di Length of existing channel to be relocated: (linear feet) 395 feet) Sec 1-s19)	
Water body name: Tributary to Smith Creek – Stream Impact #20 (Stream III) Description of impacts: 395 feet of this stream will be relocated into a roadside directly described by the stream of existing channel to be relocated: (linear feet) 395 feet Length of new channel to be constructed: (linear feet) 380 feet Existing channel to be backfilled:	O Sec 1-s19)	
Water body name: Tributary to Smith Creek – Stream Impact #20 (Stream III) Description of impacts: 395 feet of this stream will be relocated into a roadside dir Length of existing channel to be relocated: (linear feet) 395 feet Length of new channel to be constructed: (linear feet) 380 feet Existing channel to be backfilled:	Type of relocation: Piping _X Open Channel Other	
Water body name: Tributary to Smith Creek – Stream Impact #20 (Stream III) Description of impacts: 395 feet of this stream will be relocated into a roadside directly described by the stream of existing channel to be relocated: (linear feet) 395 feet Length of new channel to be constructed: (linear feet) 380 feet Existing channel to be backfilled:	Type of relocation: Piping _X Open Channel Other	
Water body name: Tributary to Smith Creek – Stream Impact #20 (Stream III) Description of impacts: 395 feet of this stream will be relocated into a roadside did Length of existing channel to be relocated: (linear feet) 395 feet Length of new channel to be constructed: (linear feet) 380 feet Existing channel to be backfilled:	Type of relocation: Piping X Open Channel Other anel (132 cubic yards)	
Water body name: Tributary to Smith Creek – Stream Impact #20 (Stream III) Description of impacts: 395 feet of this stream will be relocated into a roadside did Length of existing channel to be relocated: (linear feet) 395 feet Length of new channel to be constructed: (linear feet) 380 feet Existing channel to be backfilled:	Type of relocation: Piping _X Open Channel Other	
Water body name: Tributary to Smith Creek – Stream Impact #20 (Stream III) Description of impacts: 395 feet of this stream will be relocated into a roadside did Length of existing channel to be relocated: (linear feet) 395 feet Length of new channel to be constructed: (linear feet) 380 feet Existing channel to be backfilled:	Type of relocation:Piping _X Open ChannelOther anel (132 cubic yards) Relocation	
Water body name: Tributary to Smith Creek – Stream Impact #20 (Stream III) Description of impacts: 395 feet of this stream will be relocated into a roadside did Length of existing channel to be relocated: (linear feet) 395 feet Length of new channel to be constructed: (linear feet) 380 feet Existing channel to be backfilled:	Type of relocation:Piping _X Open ChannelOther anel (132 cubic yards) Relocation	
Water body name: Tributary to Smith Creek – Stream Impact #20 (Stream III) Description of impacts: 395 feet of this stream will be relocated into a roadside did Length of existing channel to be relocated: (linear feet) 395 feet Length of new channel to be constructed: (linear feet) 380 feet Existing channel to be backfilled:	Type of relocation:Piping _X Open ChannelOther anel (132 cubic yards) Relocation O Sec 1-s21)	
Water body name: Tributary to Smith Creek – Stream Impact #20 (Stream III) Description of impacts: 395 feet of this stream will be relocated into a roadside did Length of existing channel to be relocated: (linear feet) 395 feet Length of new channel to be constructed: (linear feet) 380 feet Existing channel to be backfilled:	Type of relocation:Piping _X Open ChannelOther anel (132 cubic yards) Relocation O Sec 1-s21)	
Water body name: Tributary to Smith Creek – Stream Impact #20 (Stream III) Description of impacts: 395 feet of this stream will be relocated into a roadside did Length of existing channel to be relocated: (linear feet) 395 feet Length of new channel to be constructed: (linear feet) 380 feet Existing channel to be backfilled:	Type of relocation:Piping _X Open ChannelOther anel (132 cubic yards) Relocation O Sec 1-s21)	
Water body name: Tributary to Smith Creek – Stream Impact #20 (Stream III) Description of impacts: 395 feet of this stream will be relocated into a roadside did Length of existing channel to be relocated: (linear feet) 395 feet Length of new channel to be constructed: (linear feet) 380 feet Existing channel to be backfilled:	Type of relocation:Piping _X Open ChannelOther anel (132 cubic yards) Relocation O Sec 1-s21)	
Water body name: Tributary to Smith Creek – Stream Impact #20 (Stream III) Description of impacts: 395 feet of this stream will be relocated into a roadside did Length of existing channel to be relocated: (linear feet) 395 feet Length of new channel to be constructed: (linear feet) 380 feet Existing channel to be backfilled:	Type of relocation:Piping _X Open ChannelOther anel (132 cubic yards) Relocation O Sec 1-s21) tch	
Water body name: Tributary to Smith Creek – Stream Impact #20 (Stream III) Description of impacts: 395 feet of this stream will be relocated into a roadside did Length of existing channel to be relocated: (linear feet) 395 feet Length of new channel to be constructed: (linear feet) 380 feet Existing channel to be backfilled:	Type of relocation:Piping _X Open ChannelOther anel (132 cubic yards) Relocation O Sec 1-s21) tch Type of relocation:	
Water body name: Tributary to Smith Creek – Stream Impact #20 (Stream III) Description of impacts: 395 feet of this stream will be relocated into a roadside did Length of existing channel to be relocated: (linear feet) 395 feet Length of new channel to be constructed: (linear feet) 380 feet Existing channel to be backfilled:	Type of relocation:Piping _X Open ChannelOther anel (132 cubic yards) Relocation O Sec 1-s21) tch	
Water body name: Tributary to Smith Creek – Stream Impact #20 (Stream III) Description of impacts: 395 feet of this stream will be relocated into a roadside did Length of existing channel to be relocated: (linear feet) 395 feet Length of new channel to be constructed: (linear feet) 380 feet Existing channel to be backfilled:	Type of relocation:Piping _X Open ChannelOther mel (132 cubic yards) Relocation O Sec 1-s21) tch Type of relocation:Piping _X Open ChannelOther	

E. Stream Relocation			
Water body name:			
Tributary to Smith Creek – Stream Impact #23 (Stream ID Sec 1-s22)			
Description of impacts:			
405 feet of this stream will be relocated into a roadside ditch			
Length of existing channel to be relocated: (linear feet)			
405 feet			
Length of new channel to be constructed: (linear feet)			
350 feet			
Existing channel to be backfilled:	Type of relocation:		
<u>X</u> Yes <u>No</u>	Piping _X Open Channel Other		
Type of fill and volume: (cubic yards)			
Earth embankment material will be used to fill in the channel (240 cubic yards)			

E. Stream Relocation		
Water body name:		
Tributary to Smith Creek – Stream Impact #26 (Stream ID Sec 1-s29)		
Description of impacts:		
100 feet of this stream will be relocated into a roadside ditch		
Length of existing channel to be relocated: (linear feet)		
100 feet		
Length of new channel to be constructed: (linear feet)		
500 feet		
Existing channel to be backfilled:	Type of relocation:	
<u>X</u> Yes <u>No</u>	Piping _X Open Channel Other	
Type of fill and volume: (cubic yards)		
Earth embankment material will be used to fill in the channel (5 cubic vards)		

E. Stream Relocation			
Water body name:			
Tributary to Smith Creek – Stream Impact #29 (Stream ID Sec 1-s33)			
Description of impacts:			
265 feet of this stream will be relocated into a roadside ditch			
Length of existing channel to be relocated: (linear feet)			
265 feet			
Length of new channel to be constructed: (linear feet)			
1,600 feet			
Existing channel to be backfilled:	Type of relocation:		
<u>X</u> Yes <u>No</u>	Piping _X Open Channel Other		
Type of fill and volume: (cubic yards)			
Earth embankment material will be used to fill in the channel (6 cubic yards)			



Open Water Impacts

F. Open Water Fill

Water Body Name:

Unnamed Private Pond – Pond ID Sec 1-w24

Description of impacts:

Approximately 0.32 acre of this 0.39 acre pond will be filled in by this project

Area of water body to be filled: (acres)

0.32 acres

Type of fill and volume: (cubic yards)

Earth embankment material will be used to fill in this pond (2,500 cys)

F. Open Water Fill

Water Body Name:

Unnamed Private Pond – Pond ID Sec 1-w28

Description of impacts:

The entire 0.15 acre pond will be filled in by this project

Area of water body to be filled: (acres)

0.15 acre

Type of fill and volume: (cubic yards)

Earth embankment material will be used to fill in this pond (1,500 cys)

F. Open Water Fill

Water Body Name:

Unnamed Private Pond – Pond ID Sec 1-p05

Description of impacts:

Approximately 0.15 acre of this 0.97 acre pond will be filled in by this project.

Area of water body to be filled: (acres)

0.15 acre

Type of fill and volume: (cubic yards)

Earth embankment material will be used to fill in this pond (1,200 cys)

F. Open Water Fill

Water Body Name:

Unnamed Private Pond – Pond ID Sec 1-p07

Description of impacts:

The entire 0.13 acre pond will be filled in by this project

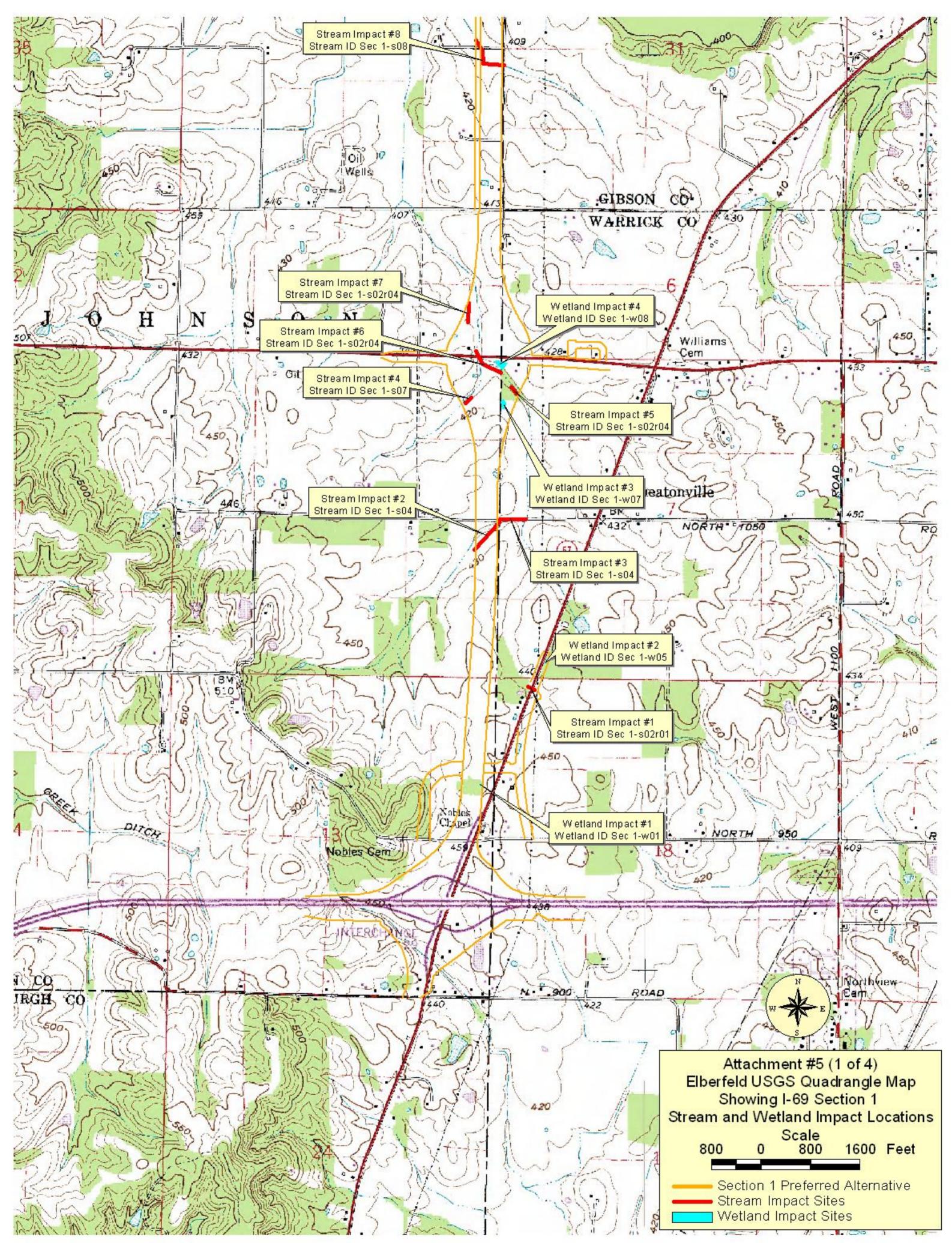
Area of water body to be filled: (acres)

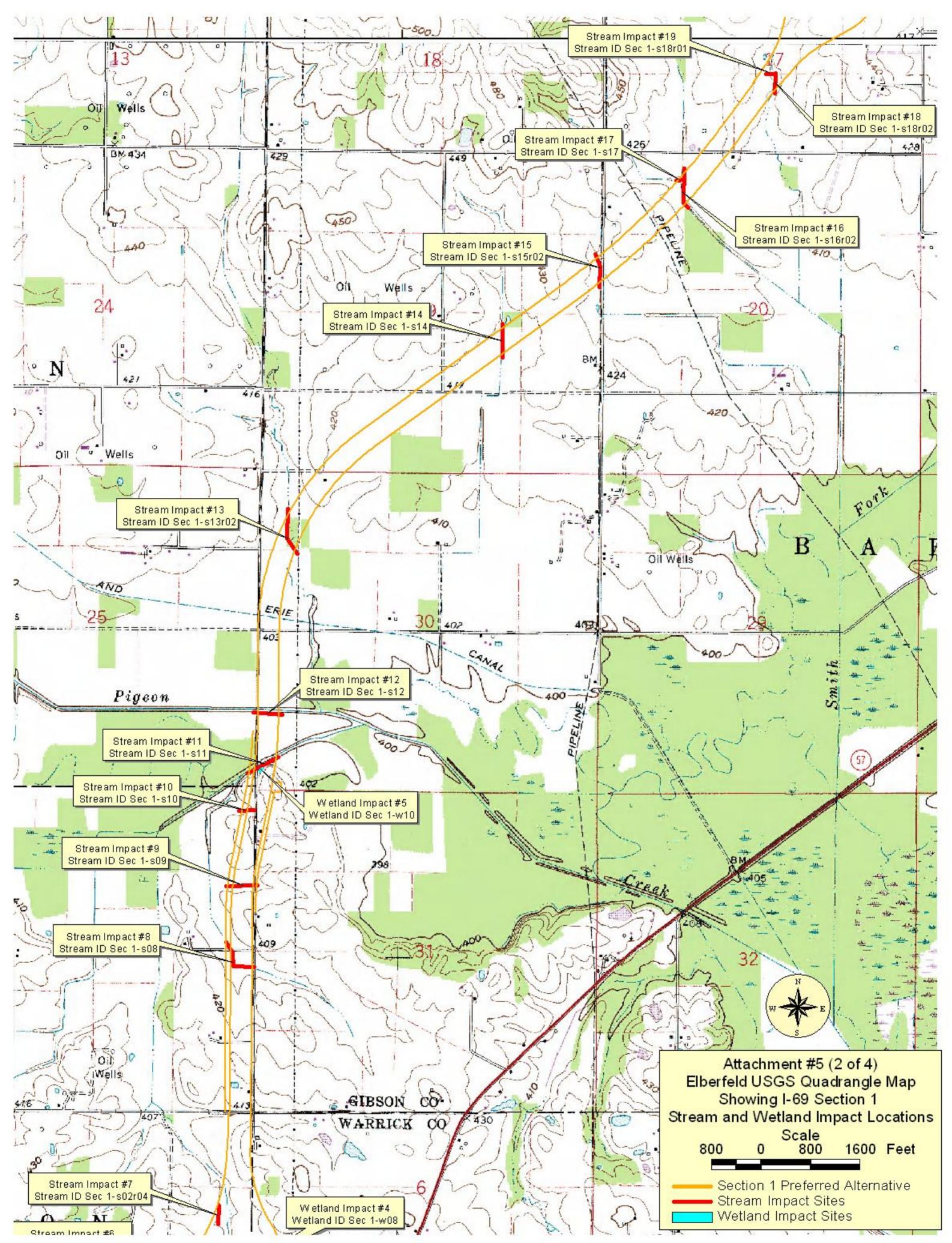
0.13 acre

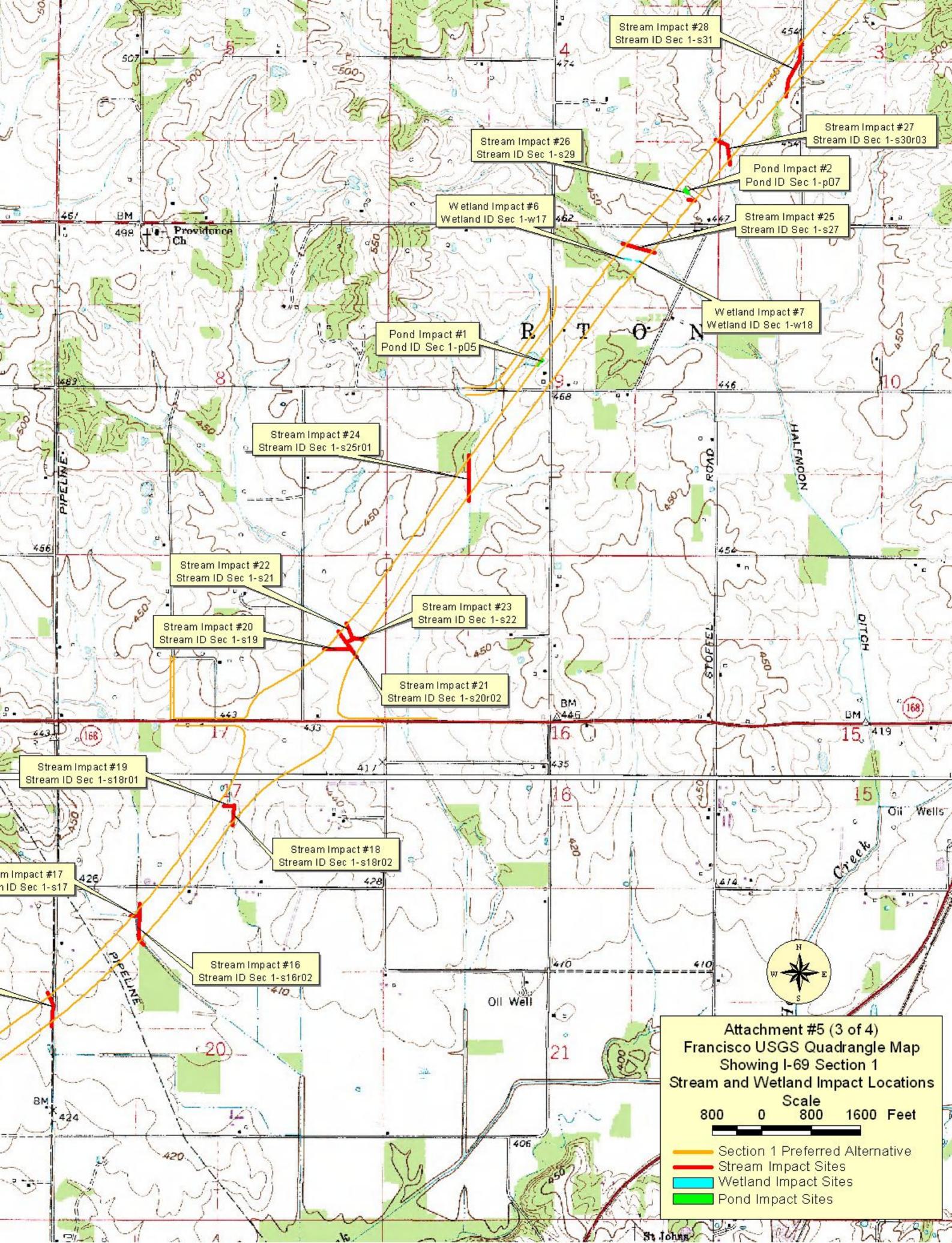
Type of fill and volume: (cubic yards)

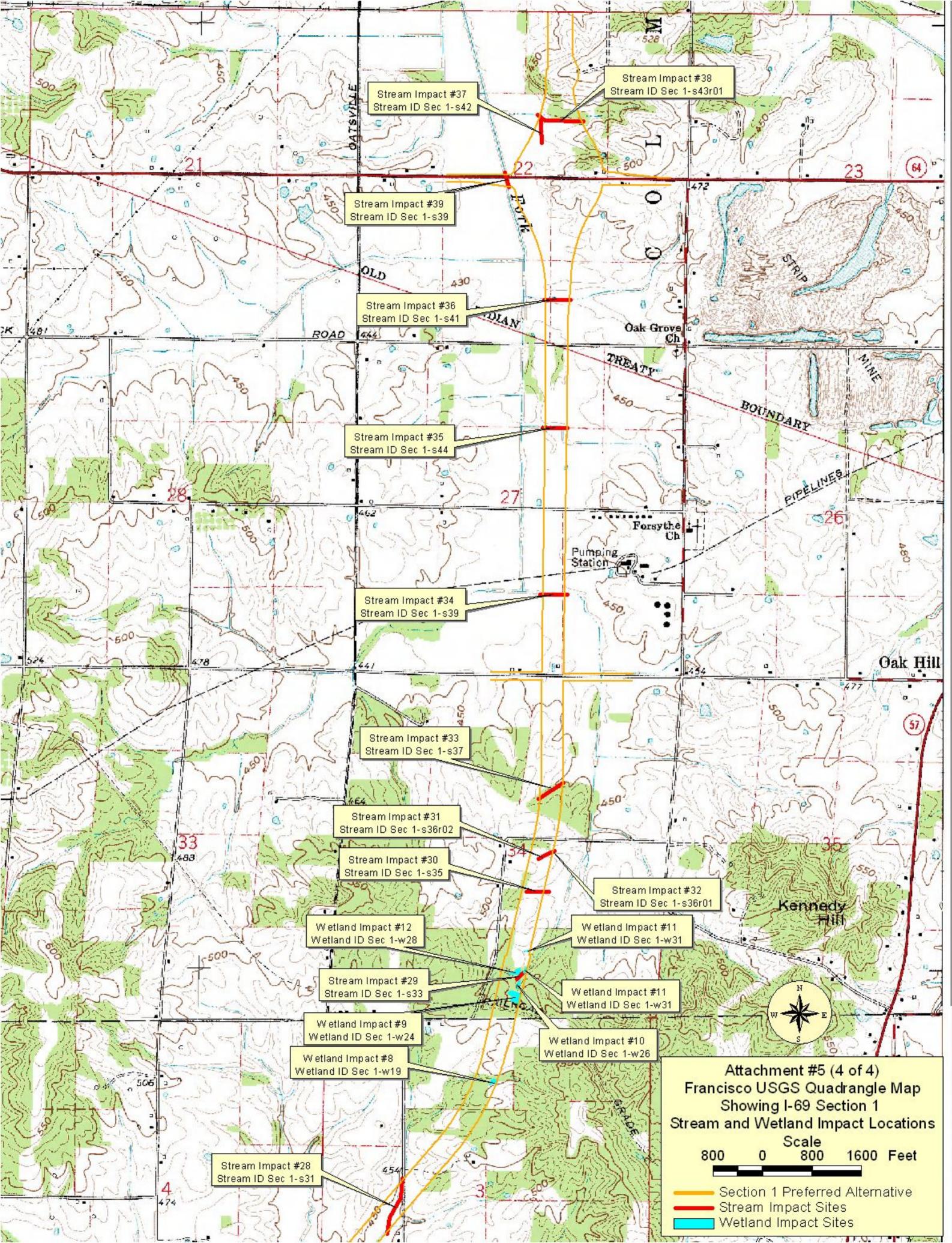
Earth embankment material will be used to fill in this pond (950 cys)

401 WQC APPLICATION ATTACHMENT #5 Francisco and Elberfeld USGS **Quadrangle Map Showing Project Location and Water Resource Impacts**

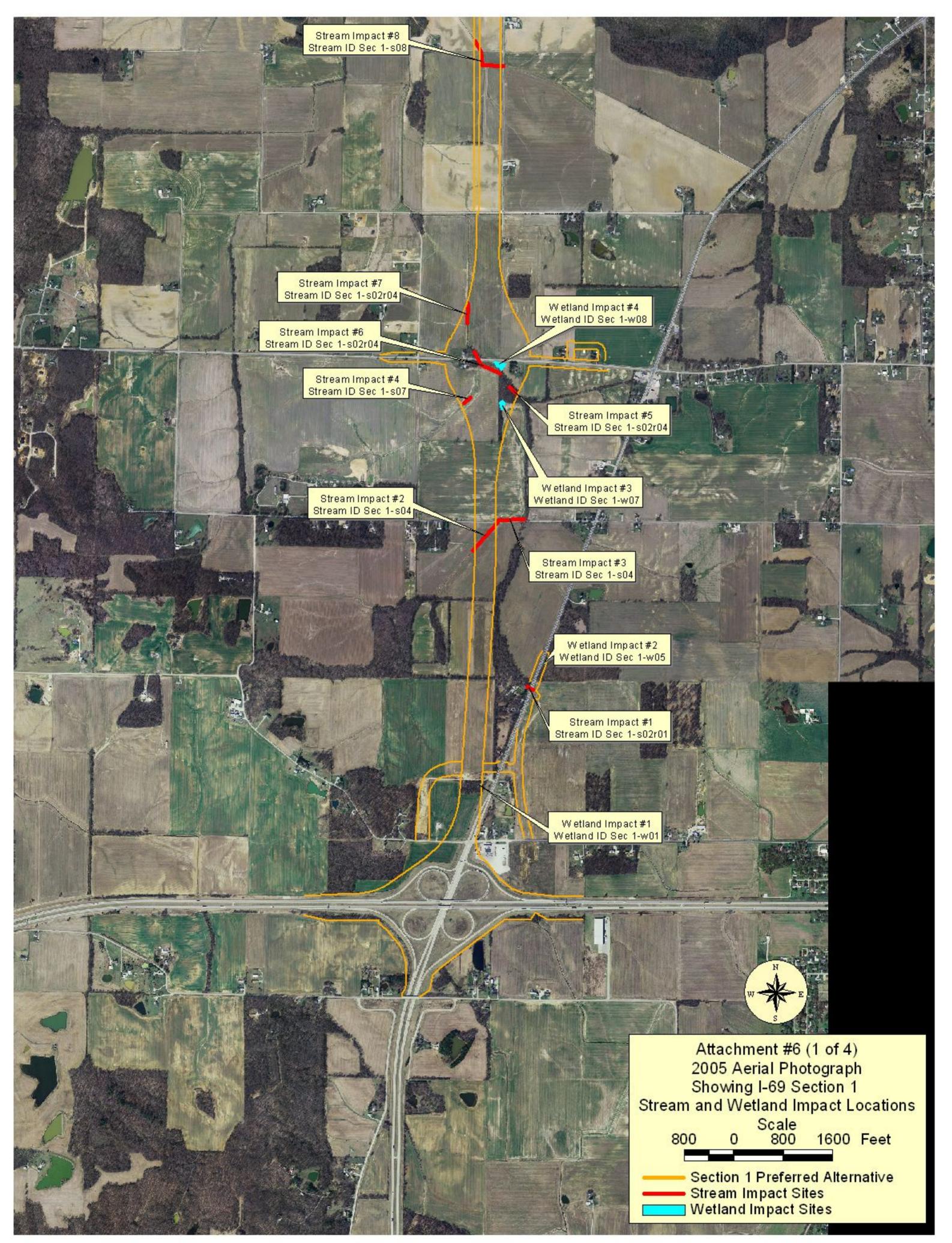


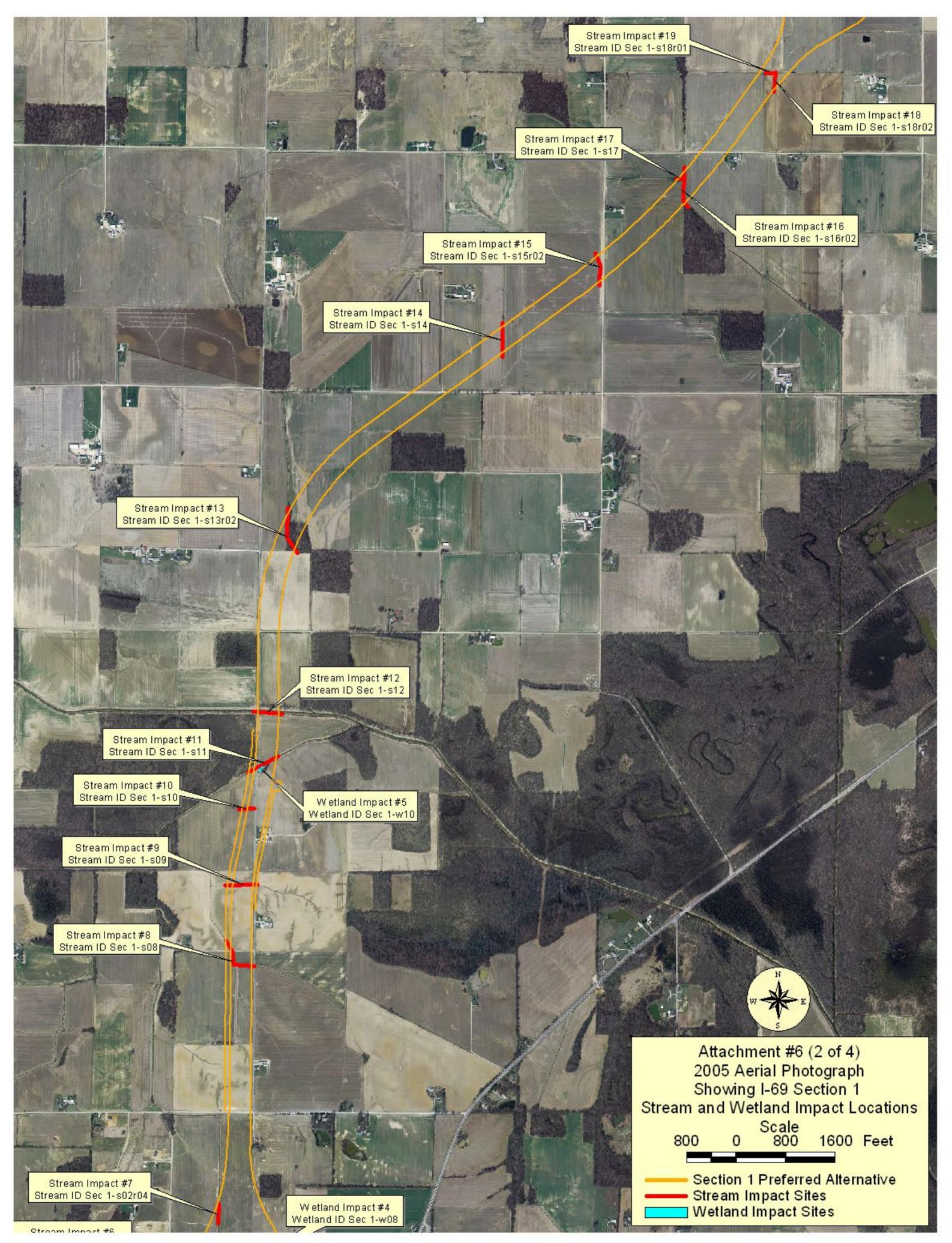


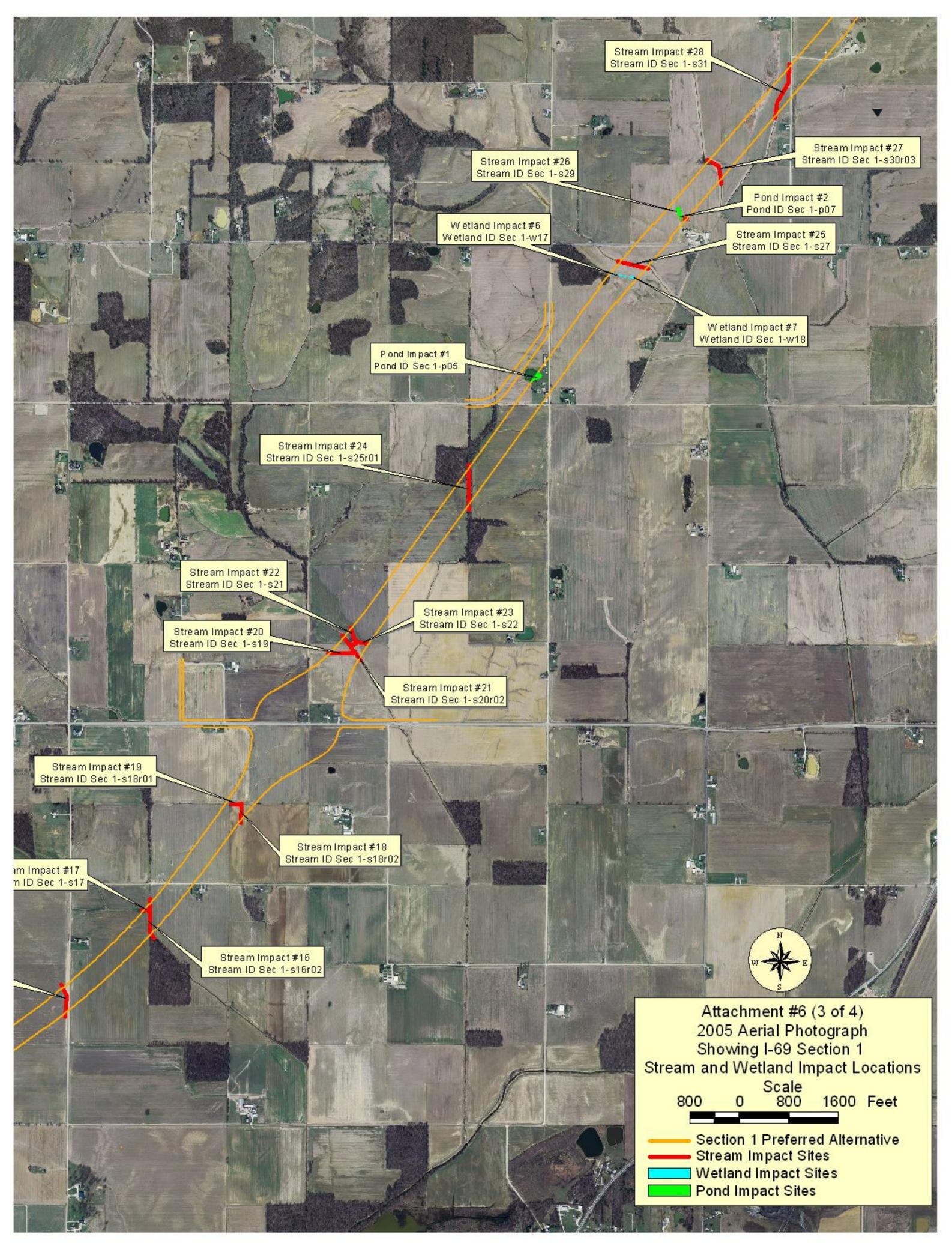


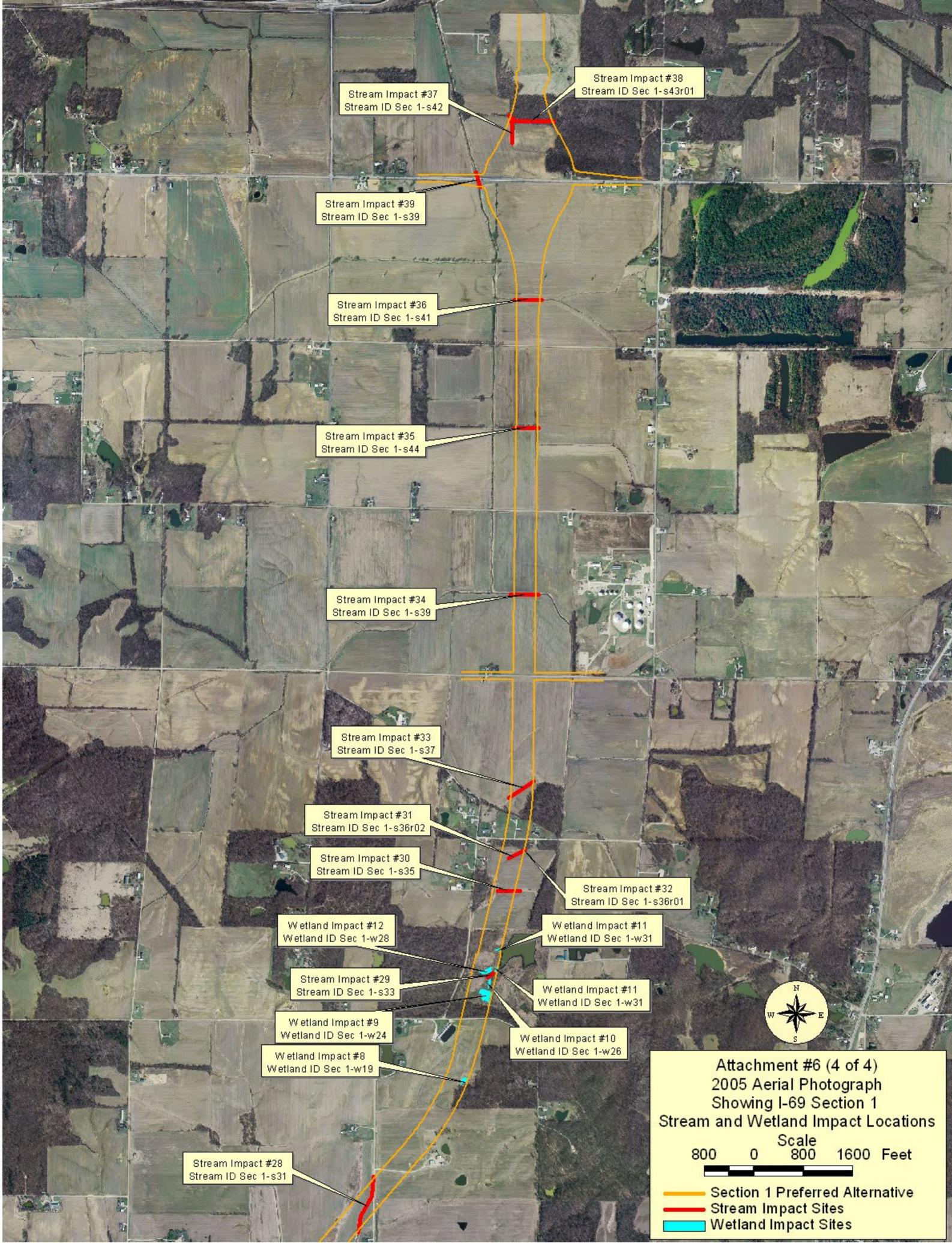


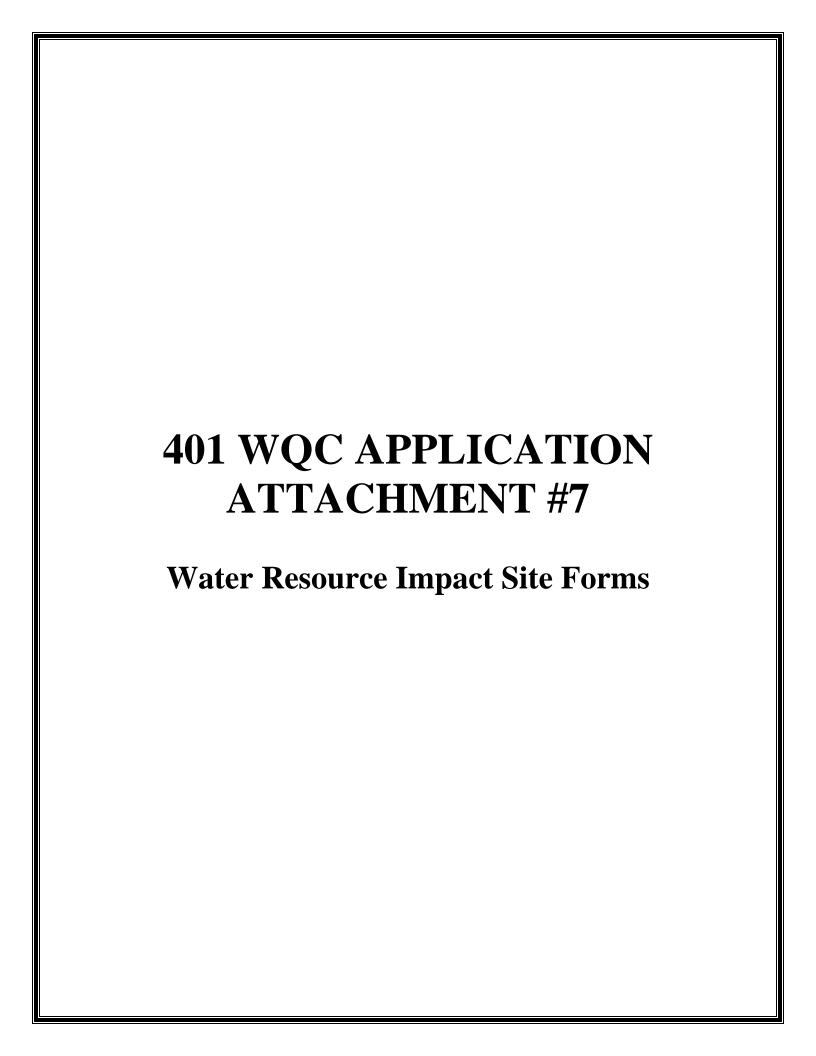
401 WQC APPLICATION ATTACHMENT #6 2005 Aerial Photograph **Showing Project Location and Water Resource Impacts**



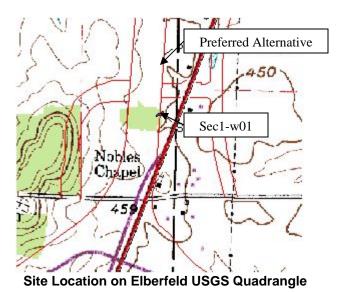


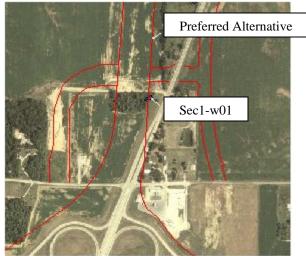






Wetland Impact # 1 (Wetland ID - Sec 1-w01)





Site Location on 2003 Aerial Photograph

Aquatic Resource: Wetland Watershed: Pigeon Ck/Snake Run

 Type:
 Forested
 UTME:
 459,036

 County:
 Gibson
 UTMN:
 4,225,356

PLSS: NE ¼ Section 13 T4S R10W USACE Jurisdiction: Yes USGS Quadrangle: Elberfeld IDEM Jurisdiction: Yes

Wetland S	Wetland Sec1-w01									
Polygon	Wetland	Area	Alternative	InWi	ment					
ID	Туре	Impacted		Animal Habitat Measure	Botanical Measure	Hydrology Measure				
W01	Forested	0.02 acres	4	Fair	Poor	Fair				

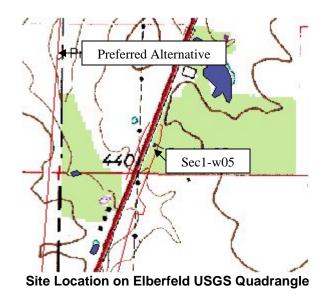
Description of Potential Impact: This wetland totals 0.06 acres and is located west of SR 57. Alternative 4 will impact 0.02 acres of this wetland complex. The mapped soil type is Hosmer silt loam. The area showed 75 – 100% vegetative cover. Poison ivy and Leersia berry dominate the herbaceous plant species, with red maple and American elms dominating the tree species. INWRAP data completed on this wetland indicated fair animal habitat, poor botanical diversity, and fair hydrology.

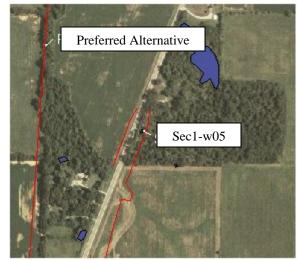
Wetland Impact # 1 (Wetland ID - Sec 1-w01)



Photograph taken looking west

Wetland Impact #2 (Wetland ID - Sec 1-w05)





Site Location on 2003 Aerial Photograph

Aquatic Resource: Wetland Watershed: Pigeon Ck/Snake Run

 Type:
 Emergent
 UTME:
 459,355

 County:
 Warrick
 UTMN:
 4,225,968

PLSS: SW ¼ Section 7 T4S R9W USACE Jurisdiction: Yes USGS Quadrangle: Elberfeld IDEM Jurisdiction: Yes

Wetland S	Wetland Sec1-w05									
Polygon	Wetland	Area	Alternative	InWi	ment					
ID	Туре	Impacted		Animal Habitat Measure	Botanical Measure	Hydrology Measure				
W05	Emergent	0.01 acre	4	Poor	Poor	Fair				

Description of Potential Impact: This is an emergent wetland located east of SR 57 in Warrick County. Alternative 4 will impact the entire 0.01 acre of this wetland complex. The mapped soil type is Iva silt loam. The herbaceous, vegetative cover was 75 - 100%, with a woody plant cover of 25 - 50%. Slender rush, annual ragweed, yellow-seed false pimpernel, Pennsylvania smartweed and blunt spikerush dominate the herbaceous species of this site. INWRAP data completed on this wetland indicated poor animal habitat, poor botanical diversity, and fair hydrology.

Wetland Impact #2 (Wetland ID - Sec 1-w05)

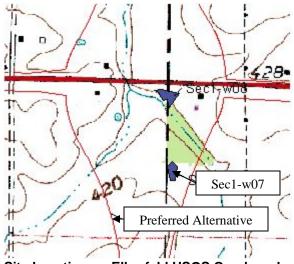


Photograph taken looking southwest

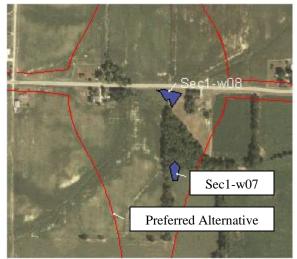


Photograph taken looking northeast

Wetland Impact #3 (Wetland ID - Sec 1-w07)







Site Location on 2003 Aerial Photograph

Aquatic Resource: Wetland Watershed: Pigeon Ck/Snake Run

UTME: Type: **Emergent** 459,142 County: Warrick UTMN: 4,227,274

PLSS: NW 1/4 Section 7 T4S R9W **USACE** Jurisdiction: Yes **USGS Quadrangle:** Elberfeld **IDEM Jurisdiction:** Yes

Wetland S	Wetland Sec1-w07									
Polygon	Wetland	Area	Alternative	InWi	ment					
ID	Туре	Impacted		Animal Habitat Measure	Botanical Measure	Hydrology Measure				
W07	Emergent	0.14 acre	4	Poor	Poor	Fair				

Description of Potential Impact: This is an emergent wetland located southwest of the intersection of SR 57 and SR 68. Alternative 4 will impact 0.14 acre of this 0.23 acre wetland. The mapped soil type is Stendal silt loam. The area showed 75 - 100% herbaceous cover and <25% tree coverage. Sorghum halepense and Ambrosia trifida dominate the herbaceous species. INWRAP data completed on this wetland indicated poor animal habitat, poor botanical diversity, and fair hydrology.

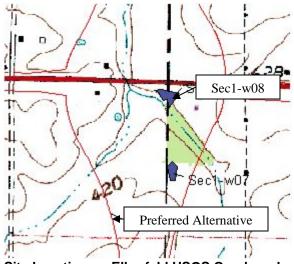


Photograph taken looking north

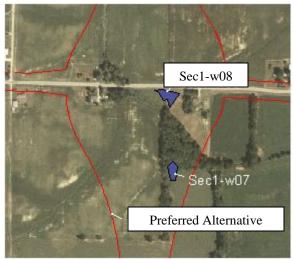


Photograph taken looking south

Wetland Impact #4 (Wetland ID - Sec 1-w08)







Site Location on 2003 Aerial Photograph

Aquatic Resource: Wetland Watershed: Pigeon Ck/Snake Run

UTME: Type: **Emergent** 459,128 County: Gibson/Warrick 4,227,474 UTMN:

PLSS: NE 1/4 Section 12 T4S R10W **USACE Jurisdiction:** Yes **USGS Quadrangle:** Elberfeld **IDEM Jurisdiction:** Yes

Wetland S	Wetland Sec1-w08									
Polygon	Wetland	Area	Alternative	InWi	ment					
ID	Туре	Impacted		Animal Habitat Measure	Botanical Measure	Hydrology Measure				
W08	Emergent	0.26 acre	4	Poor	Poor	Fair				

Description of Potential Impact: Wetland Sec1-w08 is an emergent wetland located west of SR 57. Alternative 4 will impact 0.26 acre of this 0.33 acre wetland. The mapped soil type is Stendal silt loam. The dominate herbaceous species were Bidens frondosa, Agrostis alba and smartweed. The area showed 75 - 100% vegetative, herbaceous cover. The amount of woody plant cover was found to be <25%. INWRAP data completed on this wetland indicated poor animal habitat, poor botanical diversity, and fair hydrology.

Wetland Impact #4 (Wetland ID - Sec 1-w08)



Photograph taken looking northwest

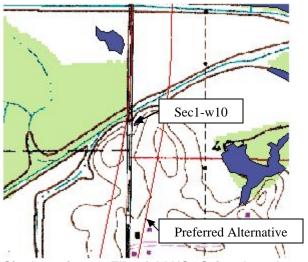


Photograph taken looking southwest

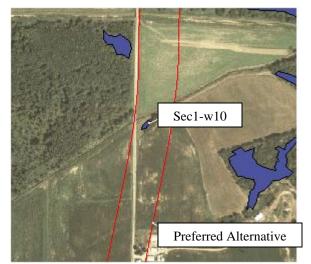


Photograph taken looking southeast

Wetland Impact #5 (Wetland ID - Sec 1-w10)







Site Location on 2003 Aerial Photograph

Aquatic Resource: Wetland Watershed: Pigeon Ck/Snake Run

 Type:
 Emergent
 UTME:
 459,181

 County:
 Gibson
 UTMN:
 4,229,987

PLSS: SW ¼ Section 30 T3S R9W USACE Jurisdiction: Yes USGS Quadrangle: Elberfeld IDEM Jurisdiction: Yes

Wetland S	Wetland Sec1-w10									
Polygon	Wetland	Area	Alternative	InWi	ment					
ID	Туре	Impacted		Animal Habitat Measure	Botanical Measure	Hydrology Measure				
W10	Emergent	0.07 acres	4	Poor	Poor	Fair				

Description of Potential Impact: Sec1-w10 is an emergent wetland located east of SR 57. The preferred alternative will impact the entire 0.07 acre of this site. The mapped soil type is Taftown silt loam. The area showed 75 – 100% herbaceous, vegetative cover and <25% woody plant cover. INWRAP data completed on this wetland indicated poor animal habitat, poor botanical diversity, and fair hydrology.

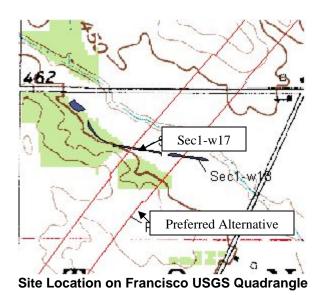


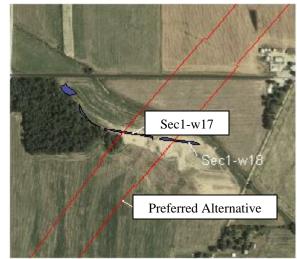
Photograph taken looking northeast



Photograph taken looking southwest

Wetland Impact #6 (Wetland ID - Sec 1-w17)





Site Location on 2003 Aerial Photograph

Aquatic Resource: Wetland Watershed: Smith Fk/Halfmoon Ck

 Type:
 Emergent
 UTME:
 463,683

 County:
 Gibson
 UTMN:
 4,236,169

PLSS: NE ¼ Section 9 T3S R9W USACE Jurisdiction: Yes USGS Quadrangle: Francisco IDEM Jurisdiction: Yes

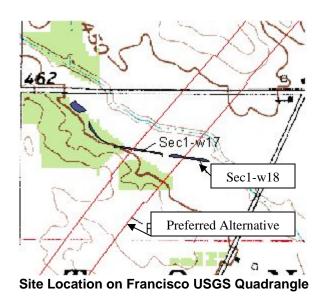
Wetland S	Wetland Sec1-w17									
Polygon	Wetland	Area	Alternative	InWi	ment					
ID	Туре	Impacted		Animal Habitat Measure	Botanical Measure	Hydrology Measure				
W17	Emergent	0.06 acre	4	Poor	Poor	Fair				

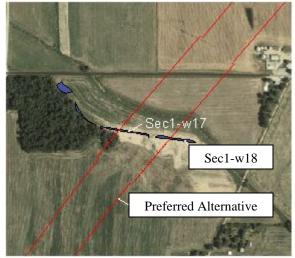
Description of Potential Impact: Sec1-w17 is an emergent wetland located west of SR 57 near CR 800. Alternative 4 will impact 0.06 acre of the total 0.11 acre site. The mapped soil type is Steff silt loam. The area showed 75 – 100% vegetative, herbaceous cover and <25% woody plant cover. Echinochloa crusgalli, Eupatorium perfoliatum and Eupatorium serotinum dominate the herbaceous species. INWRAP data completed on this wetland indicated poor animal habitat, poor botanical diversity, and fair hydrology.



Photograph taken looking northwest

Wetland Impact #7 (Wetland ID - Sec 1-w18)





Site Location on 2003 Aerial Photograph

Aquatic Resource: Wetland Watershed: Smith Fk/Halfmoon Ck

 Type:
 Emergent
 UTME:
 463,774

 County:
 Gibson
 UTMN:
 4,236,157

PLSS: NE ¼ Section 9 T3S R9W USACE Jurisdiction: Yes USGS Quadrangle: Francisco IDEM Jurisdiction: Yes

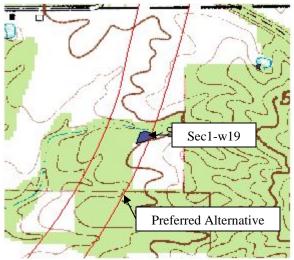
Wetland S	Wetland Sec1-w18									
Polygon	Wetland	Area	Alternative	InWi	ment					
ID	Туре	pe Impacted		Animal Habitat Measure	Botanical Measure	Hydrology Measure				
W18	Emergent	0.05 acre	4	Poor	Poor	Poor				

Description of Potential Impact: This emergent wetland is located west of SR 57 and east of CR 800. Alternative 4 will impact 0.05 acre of the total 0.12 acre site. The mapped soil type is Stendal silt loam. The area showed 75 – 100% vegetative cover. No dominate species were noted during the site visit. INWRAP data completed on this wetland indicated poor animal habitat, poor botanical diversity, and poor hydrology.

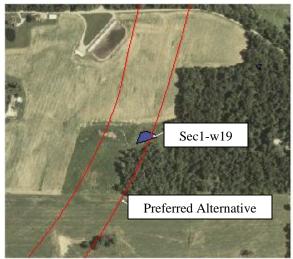


Photograph taken looking northwest

Wetland Impact #8 (Wetland ID - Sec 1-w19)







Site Location on 2003 Aerial Photograph

Aquatic Resource: Wetland Watershed: Smith Fk/Halfmoon Ck

 Type:
 Emergent
 UTME:
 465,009

 County:
 Gibson
 UTMN:
 4,237,708

PLSS: NE ¼ Section 3 T3S R9W USACE Jurisdiction: Yes USGS Quadrangle: Francisco IDEM Jurisdiction: Yes

Wetland S	Wetland Sec1-w19									
Polygon	Wetland	Area	Alternative	InWi	ment					
ID	Туре	Impacted		Animal Habitat Measure	Botanical Measure	Hydrology Measure				
W19	Emergent	0.16 acres	4	Poor	Poor	Fair				

Description of Potential Impact: Sec1-w19 is an emergent wetland located south of CR 925. Alternative 4 will impact 0.16 acre of this 0.19 acre wetland. The mapped soil type is Hosmer silt loam. The area showed 50 – 75% herbaceous cover. The dominant herbaceous species are Echniochloa crusgalli, Eleocharis obtuse, Polygonum pensylvanicum and Polygonum lapathifolium. INWRAP data completed on this wetland indicated poor animal habitat, poor botanical diversity, and fair hydrology.

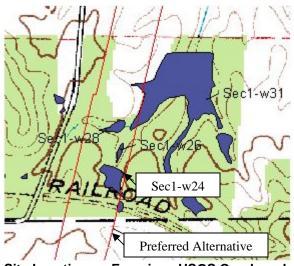


Photograph taken looking east

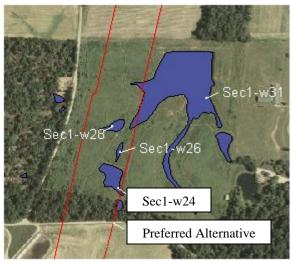


Photograph taken looking west

Wetland Impact #9 (Wetland ID - Sec 1-w24)







Site Location on 2003 Aerial Photograph

Aquatic Resource: Wetland Watershed: Keg Ck/W. Fk Keg Ck

 Type:
 Emergent
 UTME:
 465,105

 County:
 Gibson
 UTMN:
 4,238,126

PLSS: SE ¼ Section 34 T2S R9W USACE Jurisdiction: Yes USGS Quadrangle: Francisco IDEM Jurisdiction: Yes

Wetland Sec1-w24										
Polygon ID	Wetland Type	Wetland Area	Open Water	Alternative	InV	InWRAP Assessment				
	76.	Impacted	Impacted		Animal Habitat Measure	Botanical Measure	Hydrology Measure			
W24	Emergent	0.16 acre	0.32 acre	4	Fair	Poor	Fair			

Description of Potential Impact: This emergent wetland is located 1.2 miles west of SR 57. Alternative 4 will impact 0.16 acre of emergent wetland and 0.32 acre of open water of this 0.58 acre wetland complex. The mapped soil type is Hosmer silt loam. The area showed <25% vegetative cover. Juncus effusus and Echinochloa crusgalli dominate the herbaceous species. INWRAP data completed on this wetland indicated fair animal habitat, poor botanical diversity, and fair hydrology.

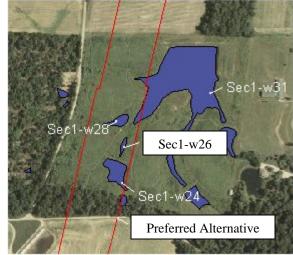
Wetland Impact #9 (Wetland ID - Sec 1-w24)



Photograph taken looking east

Wetland Impact #10 (Wetland ID - Sec 1-w26)





Site Location on 2003 Aerial Photograph

Aquatic Resource: Wetland Watershed: Keg Ck/W Fk Keg Ck

 Type:
 Emergent
 UTME:
 465,126

 County:
 Gibson
 UTMN:
 4,238,184

PLSS: SE ¼ Section 34 T2S R9W USACE Jurisdiction: Yes USGS Quadrangle: Francisco IDEM Jurisdiction: Yes

Wetland S	Wetland Sec1-w26									
Polygon	Wetland	Area	Alternative	InWi	ment					
ID	Туре	pe Impacted		Animal Habitat Measure	Botanical Measure	Hydrology Measure				
W26	Emergent	0.09 acre	4	Fair	Poor	Fair				

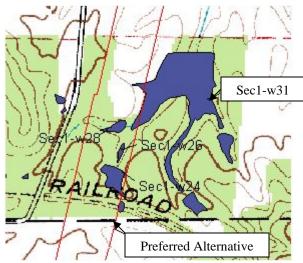
Description of Potential Impact: Sec1-w26 is an emergent wetland located 1.2 miles west of SR 57. Alternative 4 will impact the entire 0.09 acre of this site. The mapped soil type is Hosmer silt loam. The area showed 75 – 100% vegetative cover. Solidago Canadensis and Carex sp. dominate the herbaceous species. Acer saccharinum is the dominate tree species in this site. INWRAP data completed on this wetland indicated fair animal habitat, poor botanical diversity, and fair hydrology.

Wetland Impact #10 (Wetland ID - Sec 1-w26)

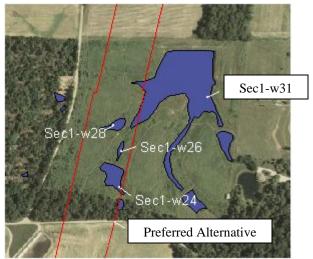


Photograph taken looking northeast

Wetland Impact #11 (Wetland ID - Sec 1-w31)







Site Location on 2003 Aerial Photograph

Aquatic Resource: Wetland Watershed: Keg Ck/W Fk Keg Ck

 Type:
 Emergent
 UTME:
 465,278

 County:
 Gibson
 UTMN:
 4,238,377

PLSS: SE ¼ Section 34 T2S R9W USACE Jurisdiction: Yes USGS Quadrangle: Francisco IDEM Jurisdiction: Yes

Wetland S	Wetland Sec1-w31									
Polygon			RAP Assessr	ment						
ID	Туре	Impacted		Animal Habitat Measure	Botanical Measure	Hydrology Measure				
W31	Emergent	0.09 acre	4	Fair	Poor	Fair				

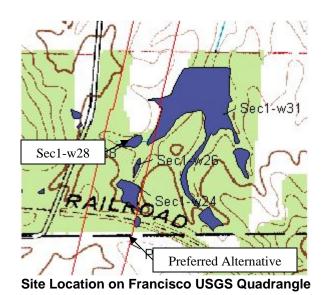
Description of Potential Impact: Sec1-w31 is an emergent wetland located west of SR 57. Alternative 4 will impact 0.09 acre of the total 1.9 acre area. The mapped soil type is Stendal silt loam. The area showed 75 - 100% vegetative cover. Two vegetation zones were noted during the site visit. The first zone composes 25 - 50% of the polygon, and the dominate herbaceous species is Myriophyllum spicatum. The second vegetation zone composes 50 - 75% of the polygon, and the dominate herbaceous species is Ludwegia polycarpa. INWRAP data completed on this wetland indicated fair animal habitat, poor botanical diversity, and fair hydrology.

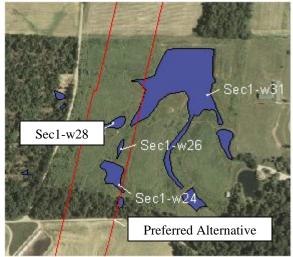
Wetland Impact #11 (Wetland ID - Sec 1-w31)



Photograph taken looking west

Wetland Impact #12 (Wetland ID - Sec 1-w28)





Site Location on 2003 Aerial Photograph

Aquatic Resource: Wetland Watershed: Keg Ck/W Fk Keg Ck

 Type:
 Emergent
 UTME:
 465,126

 County:
 Gibson
 UTMN:
 4,238,245

PLSS: SE ¼ Section 34 T2S R9W USACE Jurisdiction: Yes USGS Quadrangle: Francisco IDEM Jurisdiction: Yes

Wetland	Wetland Sec1-w28									
Polygon ID	Wetland Type	Wetland Area	Open Water	Alternative	InV	InWRAP Assessment				
	376.5	Impacted	Impacted		Animal Habitat Measure	Botanical Measure	Hydrology Measure			
W24	Emergent	0.07 acre	0.15 acre	4	Fair	Poor	Fair			

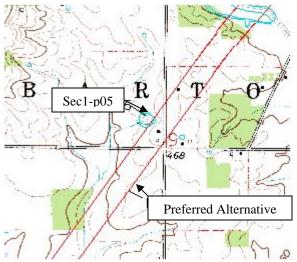
Description of Potential Impact: Sec1-w28 is an emergent wetland located 1.2 miles west of SR 57. Alternative 4 will impact the entire 0.07 acre emergent wetland and 0.15 acre open water of this wetland complex. The mapped soil type is Hosmer silt loam. The area showed <25% vegetative cover. Echinochloa crusgalli and Salix nigra dominate the herbaceous cover of this site. INWRAP data completed on this wetland indicated fair animal habitat, poor botanical diversity, and fair hydrology.

Wetland Impact #12 (Wetland ID - Sec 1-w28)

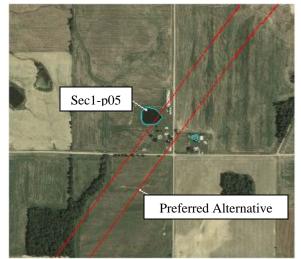


Photograph taken looking east

Pond Impact #1 (Pond ID - Sec1-p05)







Site Location on 2003 Aerial Photograph

Aquatic Resource: Pond

Gibson

UTME: 463,246

County: PLSS: NW 1/4 Section 9 T3S R9W UTMN: 4,235,668

Francisco

USACE Jurisdiction: Yes **IDEM Jurisdiction:** Yes

USGS Quadrangle:

Watershed: Smith Fk/Halfmoon Ck

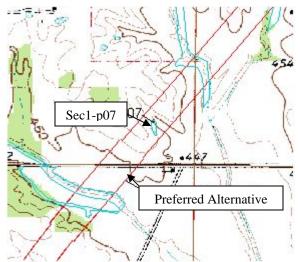
Total Impact (Acres):

Alternative 4 will impact 0.15 acre of this 0.97 acre pond.

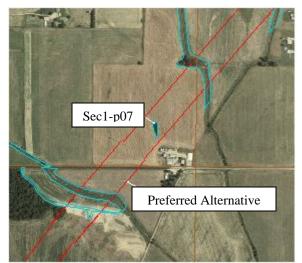


Photograph taken looking southeast

Pond Impact #2 (Pond ID - Sec1-p07)



Site Location on Francisco USGS Quadrangle



Site Location on 2003 Aerial Photograph

Yes

Aquatic Resource: Pond

Gibson

UTME: 463,994 **UTMN**: 4,236,483

County: PLSS:

SE 1/4 Section 4 T3S R9W

W

USACE Jurisdiction: Yes

USGS Quadrangle:

Francisco

IDEM Jurisdiction:

Watershed: Smith Fk/Halfmoon Ck

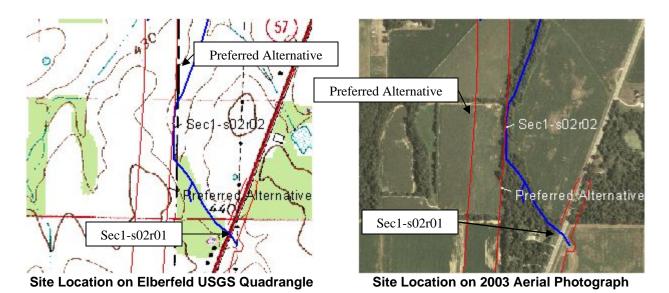
Total Impact (Acres):

Alternative 4 will impact this entire 0.13 acre pond.



Photograph taken looking northwest

Stream Impact #1 (Stream ID - Sec 1-s02r01)



Aquatic Resource: Stream Watershed: Pigeon Ck/Snake Run

Stream Name: Barn Branch Creek Channelized: Yes Gibson IDEM 303(d) List: County: No PLSS: SE 1/4 Section 12 T4S R10W **OHWM Width ft:** 9.3 459,100 **UTME: OHWM Depth ft:** 0.33 UTMN: 4,226,255 **USACE Jurisdiction:** Yes **USGS Quadrangle:** Elberfeld **IDEM Jurisdiction:** Yes

Stream Sec 1-s02r01					
Stream Name	Length of Impact	Area Impacted	Alternative	Stream Habitat Assessment	
Barn Branch Creek	181 feet	0.04 acre	4	HHEI 51/Modified Class II	

Stream Type: Intermittent

Evaluation Type: HHEI Evaluation Score: 51

Watershed Area

(square miles): 0.34

Legal Drain: No

Predominate Substrate: Clay

Estimated

Riparian Width (feet): 112

Estimated

Riparian Area (acres): 0.77

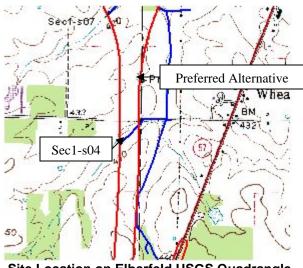


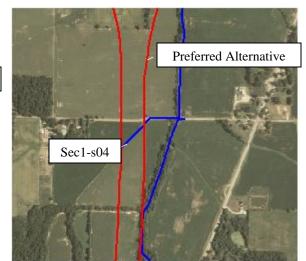
Photograph taken looking upstream



Photograph taken looking downstream

Stream Impact # 2 and #3 (Stream ID - Sec 1-s04)





Site Location on Elberfeld USGS Quadrangle

Elberfeld

Site Location on 2003 Aerial Photograph

Yes

IDEM Jurisdiction:

Aquatic Resource: Stream Watershed: Pigeon Ck/Snake Run

Unnamed Trib. to Pigeon Creek Channelized: **Stream Name:** Yes Gibson IDEM 303(d) List: County: No PLSS: SE 1/4 Section 12 T4S R10W OHWM Width ft: 5 459,067 1 **UTME:** OHWM Depth ft: UTMN: 4,226,621 **USACE Jurisdiction:** Yes

Stream Sec 1-s04				
Stream Name	Length of Impact	Area Impacted	Alternative	Stream Habitat Assessment
Unnamed Trib. to Pigeon Creek	828 feet	0.10 acre	4	HHEI 25/Modified Class I

Stream Type: Intermittent

Evaluation Type: HHEI **Evaluation Score:** 25

Watershed Area

USGS Quadrangle:

(square miles): 0.49
Legal Drain: Yes
Predominate Substrate: Clay

Estimated

Riparian Width (feet): 0

Estimated

Riparian Area (acres): 0

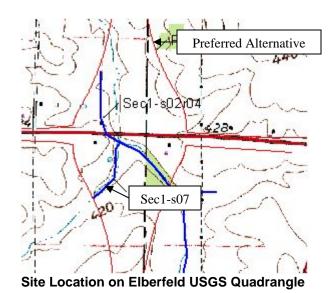


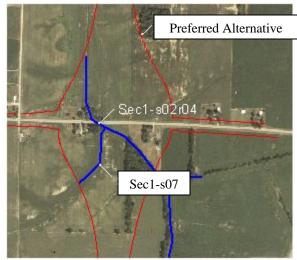
Photograph taken looking upstream



Photograph Looking Downstream

Stream Impact #4 (Stream ID - Sec 1-s07)





Site Location on 2003 Aerial Photograph

Yes

Aquatic Resource: Stream Watershed: Pigeon Ck/Snake Run

Unnamed Trib. to Pigeon Creek Channelized: **Stream Name:** Yes Gibson IDEM 303(d) List: County: No PLSS: NE 1/4 Section 12 T4S R10W **OHWM Width ft:** 3 459,012 **UTME:** OHWM Depth ft: 0.5 UTMN: 4,227,370 **USACE Jurisdiction:** Yes

Stream Sec 1-s07				
Stream Name	Length of Impact	Area Impacted	Alternative	Stream Habitat Assessment
Unnamed Trib. to Pigeon Creek	126 feet	0.01 acre	4	HHEI 10/Modified Class I

IDEM Jurisdiction:

Stream Type: Intermittent

Elberfeld

Evaluation Type: HHEI Evaluation Score: 10

Watershed Area

USGS Quadrangle:

(square miles): 0.21 Legal Drain: Yes

Predominate Substrate: Clay and Silt

Estimated

Riparian Width (feet): 0

Estimated

Riparian Area (acres): 0

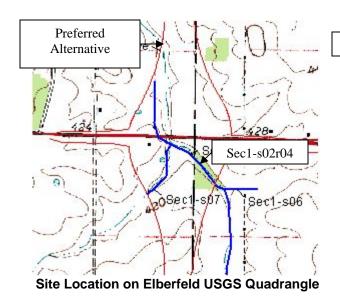


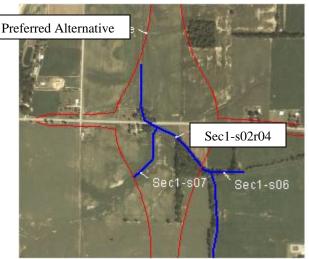
Photograph taken looking upstream



Photograph Looking Downstream

Stream Impact #5, #6, and #7 (Stream ID - Sec 1-s02r04)





Site Location on 2003 Aerial Photograph

Aquatic Resource: Stream Watershed: Pigeon Ck/Snake Run

Stream Name: Barn Branch Creek Channelized: No Gibson IDEM 303(d) List: County: No PLSS: NE 1/4 Section 12 T4S R10W **OHWM Width ft:** 6 **UTME:** 459,055 OHWM Depth ft: 1.5 UTMN: 4,227,472 **USACE Jurisdiction:** Yes **USGS Quadrangle:** Elberfeld **IDEM Jurisdiction:** Yes

Stream Sec 1-s02r04					
Stream Name	Length of Impact	Area Impacted	Alternative	Stream Habitat Assessment	
Barn Branch Creek	1,103 feet	0.15 acre	4	QHEI 33	

Stream Type: Intermittent

Evaluation Type: QHEI Evaluation Score: 33

Watershed Area

(square miles): 1.54 Legal Drain: Yes

Predominate Substrate: Silt and Hardpan

Estimated

Riparian Width (feet): 235

Estimated

Riparian Area (acres): 2.9

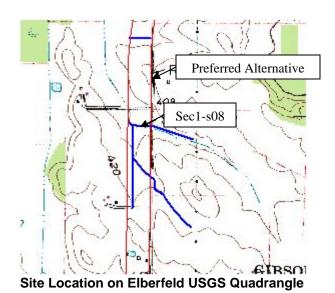


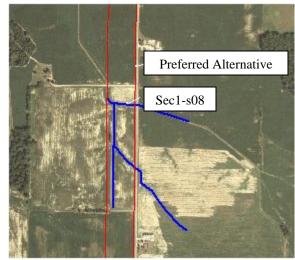
Photograph Looking Upstream



Photograph Looking Downstream

Stream Impact #8 (Stream ID - Sec 1-s08)





Site Location on 2003 Aerial Photograph

Aquatic Resource: Stream Watershed: Pigeon Ck/Snake Run

Unnamed Trib. to Pigeon Creek Channelized: **Stream Name:** Yes Gibson IDEM 303(d) List: County: No PLSS: SE 1/4 Section 36 T3S R10W **OHWM Width ft:** 5 459,094 **UTME: OHWM Depth ft:** 1.5 UTMN: 4,228,997 **USACE Jurisdiction:** Yes

USGS Quadrangle: Elberfeld IDEM Jurisdiction: Yes

Stream Sec 1-s08				
Stream Name	Length of Impact	Area Impacted	Alternative	Stream Habitat Assessment
Unnamed Trib. to Pigeon Creek	424 feet	0.05 acres	4	HHEI 10/Modified Class I

Stream Type: Ephemeral

Evaluation Type: HHEI Evaluation Score: 10

Watershed Area

(square miles): 0.05 Legal Drain: Yes

Predominate Substrate: Clay and Silt

Estimated

Riparian Width (feet): 0

Estimated

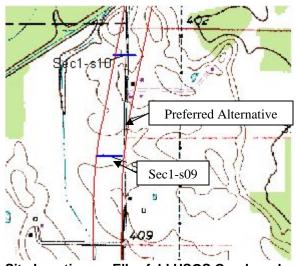


Photograph Looking Upstream

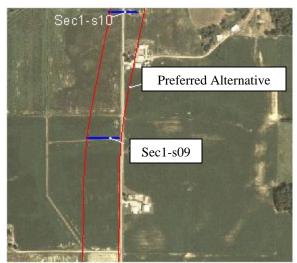


Photograph Looking Downstream

Stream Impact #9 (Stream ID - Sec 1-s09)







Site Location on 2003 Aerial Photograph

Aquatic Resource: Stream Watershed: Pigeon Ck/Snake Run

Unnamed Trib. to Pigeon Creek Channelized: **Stream Name:** Yes Gibson IDEM 303(d) List: County: No PLSS: NE 1/4 Section 36 T3S R10W **OHWM Width ft:** 5 459,094 **UTME:** OHWM Depth ft: 1.3 UTMN: 4,229,408 **USACE Jurisdiction:** Yes **USGS Quadrangle:** Elberfeld **IDEM Jurisdiction:** Yes

Stream Sec 1-s09				
Stream Name	Length of Impact	Area Impacted	Alternative	Stream Habitat Assessment
Unnamed Trib. to Pigeon Creek	385 feet	0.04 acres	4	HHEI 10/Modified Class I

Stream Type: Ephemeral

Evaluation Type: HHEI **Evaluation Score:** 10

Watershed Area

(square miles): 0.05 Legal Drain: No **Predominate Substrate:** Silt

Estimated

Riparian Width (feet): 0

Estimated

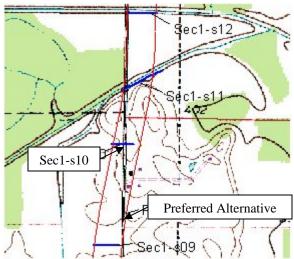


Photograph Looking Upstream

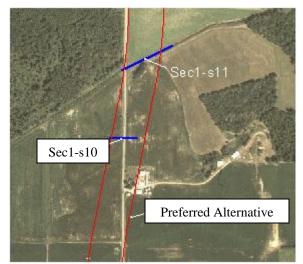


Photograph Looking Downstream

Stream Impact #10 (Stream ID - Sec 1-s10)







Site Location on 2003 Aerial Photograph

Aquatic Resource: Stream Watershed: Pigeon Ck/Snake Run

Stream Name:Unnamed Trib. to Pigeon Creek Channelized:YesCounty:GibsonIDEM 303(d) List:No

PLSS: NE ¼ Section 36 T3S R10W OHWM Width ft: 1

 UTME:
 459,149
 OHWM Depth ft:
 0.5

 UTMN:
 4,229,787
 USACE Jurisdiction:
 Yes

USGS Quadrangle: Elberfeld IDEM Jurisdiction: Yes

Stream Sec 1-s10				
Stream Name	Length of Impact	Area Impacted	Alternative	Stream Habitat Assessment
Unnamed Trib. to Pigeon Creek	325 feet	0.01 acres	4	HHEI 10/Modified Class I

Stream Type: Ephemeral

Evaluation Type: HHEI
Evaluation Score: 10

Watershed Area

(square miles): 0.01 Legal Drain: No

Predominate Substrate: Clay and Silt

Estimated

Riparian Width (feet): 0

Estimated

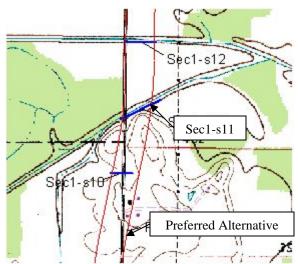


Photograph Looking Upstream

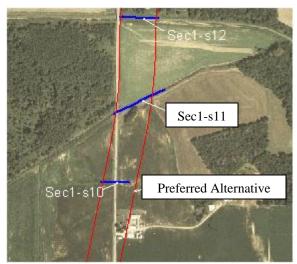


Photograph Looking Downstream

Stream Impact #11 (Stream ID - Sec 1-s11)



Site Location on Elberfeld USGS Quadrangle



Site Location on 2003 Aerial Photograph

Aquatic Resource: Stream Watershed: Pigeon Ck/Snake Run

Stream Name: Unnamed Trib. to Pigeon Creek Channelized: Yes

County: Gibson IDEM 303(d) List: No

PLSS: SW ¼ Section 30 T3S R9W OHWM Width ft: 7

 UTME:
 459,219
 OHWM Depth ft:
 2.3

 UTMN:
 4,230,029
 USACE Jurisdiction:
 Yes

USGS Quadrangle: Elberfeld IDEM Jurisdiction: Yes

Stream Sec 1-s11				
Stream Name	Length of Impact	Area Impacted	Alternative	Stream Habitat Assessment
Unnamed Trib. to Pigeon Creek	460 feet	0.07 acres	4	QHEI 23

Stream Type: Perennial

Evaluation Type: QHEI

Evaluation Score: 23

Watershed Area

(square miles): 5.77 Legal Drain: Yes

Predominate Substrate: Sand and Muck

Estimated

Riparian Width (feet): 0

Estimated

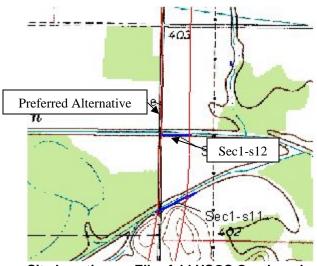


Photograph Looking Upstream



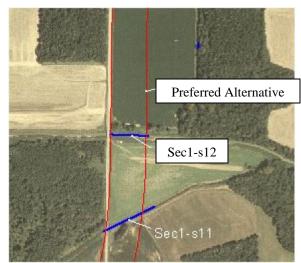
Photograph Looking Downstream

Stream Impact #12 (Stream ID - Sec 1-s12)





Elberfeld



Site Location on 2003 Aerial Photograph

Yes

Aquatic Resource: Stream Watershed: Pigeon Ck/Snake Run

Pigeon Creek **Stream Name:** Channelized: Yes Gibson IDEM 303(d) List: County: No PLSS: SW 1/4 Section 30 T3S R9W **OHWM Width ft:** 21 UTME: 459,216 **OHWM Depth ft:** 2.7 UTMN: 4,230,282 **USACE Jurisdiction:** Yes

Stream Sec 1-s12					
Stream Name	Length of Impact	Area Impacted	Alternative	Stream Habitat Assessment	
Pigeon Creek	385 feet	0.19 acre	4	QHEI 19	

IDEM Jurisdiction:

Perennial Stream Type: **Evaluation Type:** QHEI

Evaluation Score: 19

Watershed Area

USGS Quadrangle:

98.2 (square miles): Yes Legal Drain:

Predominate Substrate: Sand and Silt

Estimated

Riparian Width (feet): 10

Estimated

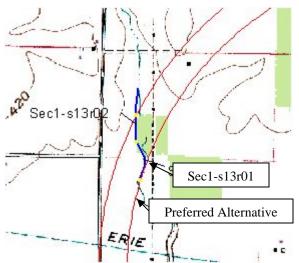


Photograph Looking Upstream

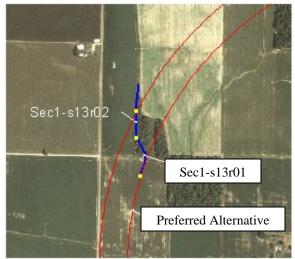


Photograph Looking Downstream

Stream Impact #13 (Stream ID - Sec 1-s13r01)







Site Location on 2003 Aerial Photograph

Aquatic Resource: Stream Watershed: Pigeon Ck/Snake Run

Stream Name: Unnamed Trib. to Pigeon Creek Channelized: Yes

County: Gibson IDEM 303(d) List: No

PLSS: NW ¼ Section 30 T3S R9W OHWM Width ft: 8

UTME: 459,339 **OHWM Depth ft:** 2

UTMN: 4,231,104 USACE Jurisdiction: Yes

USGS Quadrangle: Elberfeld IDEM Jurisdiction: Yes

Stream Sec 1-s13r01				
Stream Name	Length of Impact	Area Impacted	Alternative	Stream Habitat Assessment
Unnamed Trib. to Pigeon Creek	330 feet	0.06 acres	4	QHEI 22

Stream Type: Intermittent

Evaluation Type: QHEI

Evaluation Score: 22

Watershed Area

(square miles): 1.67 Legal Drain: Yes

Predominate Substrate: Clay and Silt

Estimated

Riparian Width (feet): 180

Estimated

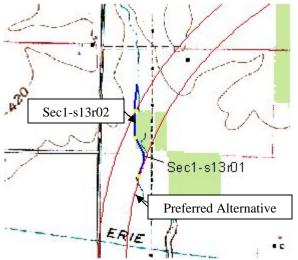


Photograph Looking Upstream

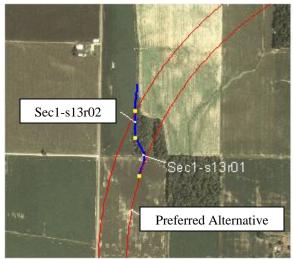


Photograph taken looking downstream

Stream Impact #13 (Stream ID - Sec 1-s13r02)







Site Location on 2003 Aerial Photograph

Aquatic Resource: Stream Watershed: Pigeon Ck/Snake Run

Stream Name: Unnamed Trib. to Pigeon Creek Channelized: Yes

County: Gibson IDEM 303(d) List: No

PLSS: NW 1/4 Section 30 T3S R9W OHWM Width ft: 8

UTME: 459,311 **OHWM Depth ft:** 2.5

UTMN: 4,231,215 USACE Jurisdiction: Yes

USGS Quadrangle: Elberfeld IDEM Jurisdiction: Yes

Stream Sec 1-s13r02				
Stream Name	Length of Impact	Area Impacted	Alternative	Stream Habitat Assessment
Unnamed Trib. to Pigeon Creek	600 feet	0.11 acre	4	QHEI 27

Stream Type: Intermittent

Evaluation Type: QHEI

Evaluation Score: 27

Watershed Area

(square miles): 1.46 Legal Drain: Yes

Predominate Substrate: Clay and Sand

Estimated

Riparian Width (feet): 100

Estimated

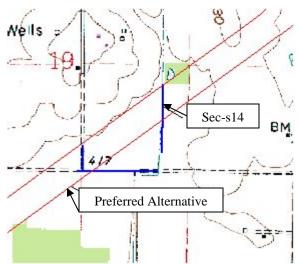


Photograph Looking Upstream

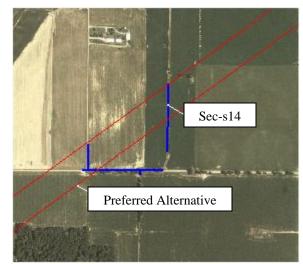


Photograph Looking Downstream

Stream Impact #14 (Stream ID - Sec 1-s14)







Site Location on 2003 Aerial Photograph

Aquatic Resource: Stream Watershed: Smith Fk/Halfmoon Ck

Stream Name: Unnamed Trib. to Pigeon Creek Channelized: Yes

County: Gibson IDEM 303(d) List: No

PLSS: SE ¼ Section 19 T3S R9W OHWM Width ft: 5

UTME: 460,400 **OHWM Depth ft:** 2

UTMN: 4,232,148 USACE Jurisdiction: Yes

USGS Quadrangle: Elberfeld IDEM Jurisdiction: Yes

Stream Sec 1-s14				
Stream Name	Length of Impact	Area Impacted	Alternative	Stream Habitat Assessment
Unnamed Trib. to Pigeon Creek	540 feet	0.06 acre	4	HHEI 25/Modified Class I

Stream Type: Intermittent

Evaluation Type: HHEI

Evaluation Score: 25

Watershed Area

(square miles): 0.43 Legal Drain: No

Predominate Substrate: Clay

Estimated

Riparian Width (feet): 0

Estimated

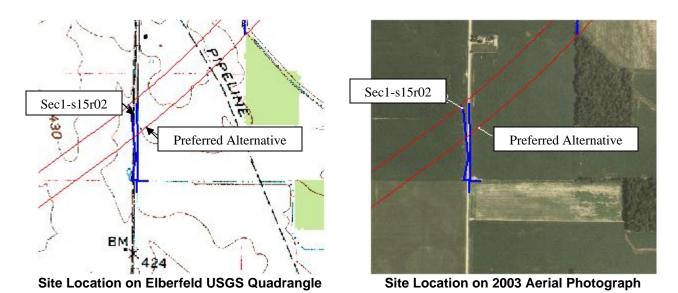


Photograph Looking Upstream



Photograph Looking Downstream

Stream Impact #15 (Stream ID - Sec 1-s15r02)



Aquatic Resource: Stream Watershed: Smith Fk/Halfmoon Ck

Stream Name: Unnamed Trib. to Smith Creek Channelized: Yes

County: Gibson IDEM 303(d) List: No
PLSS: NE ¼ Section 19 T3S R9W OHWM Width ft: 2.5

 UTME:
 460,892
 OHWM Depth ft:
 0.8

 UTMN:
 4,232,513
 USACE Jurisdiction:
 Yes

USGS Quadrangle: Elberfeld IDEM Jurisdiction: Yes

Stream Sec 1-s15r02				
Stream Name	Length of Impact	Area Impacted	Alternative	Stream Habitat Assessment
Unnamed Trib. to Smith Creek	380 feet	0.02 acre	4	HHEI 20/Modified Class I

Stream Type: Ephemeral

Evaluation Type: HHEI

Evaluation Score: 20

Watershed Area

(square miles): 0.04

Legal Drain: No

Predominate Substrate: Silt

Estimated

Riparian Width (feet): 0

Estimated

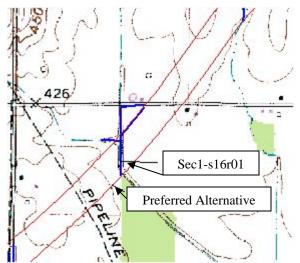


Photograph Looking Upstream

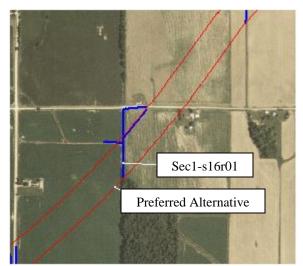


Photograph Looking Downstream

Stream Impact #16 (Stream ID - Sec 1-s16r01)







Site Location on 2003 Aerial Photograph

Aquatic Resource: Stream

Stream Name:

Gibson County:

PLSS: NW 1/4 Section 20 T3S R9W

UTME: 461,318

UTMN: 4,232,912

USGS Quadrangle: Francisco Watershed: Smith Fk/Halfmoon Ck

Yes

IDEM 303(d) List: No

OHWM Width ft: 7.5

OHWM Depth ft: 0.33

USACE Jurisdiction: Yes

IDEM Jurisdiction: Yes

Stream Sec 1-s16r01				
Stream Name	Length of Impact	Area Impacted	Alternative	Stream Habitat Assessment
Unnamed Trib. to Smith Creek	565 feet	0.10 acre	4	HHEI 50/Modified Class II

Stream Type: Intermittent

Evaluation Type: HHEI

Evaluation Score: 50

Watershed Area

(square miles): 0.94 Legal Drain: No **Predominate Substrate:** Gravel

Estimated

Riparian Width (feet): 0

Estimated

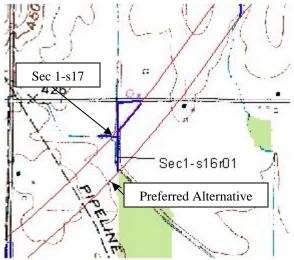


Photograph Looking Upstream

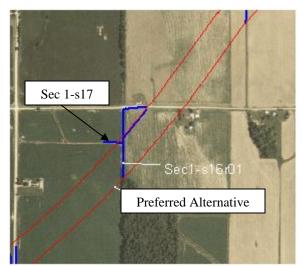


Photograph Looking Downstream

Stream Impact #17 (Stream ID - Sec 1-s17)







Site Location on 2003 Aerial Photograph

Aquatic Resource: Stream

Unnamed Trib. to Smith Creek Channelized:

County: Gibson

Stream Name:

PLSS: NW 1/4 Section 20 T3S R9W

UTME: 461,318

UTMN: 4,232,912

USGS Quadrangle: Francisco

Watershed: Smith Fk/Halfmoon Ck

Channelized: Yes

IDEM 303(d) List: No

OHWM Width ft: 4

OHWM Depth ft: 1.5

USACE Jurisdiction: Yes

IDEM Jurisdiction: Yes

Stream Sec 1-s16r02				
Stream Name	Length of Impact	Area Impacted	Alternative	Stream Habitat Assessment
Unnamed Trib. to Smith Creek	70 feet	0.01 acre	4	HHEI 29/Modified Class I

Stream Type: Ephemeral

Evaluation Type: HHEI

Evaluation Score: 29

Watershed Area

(square miles): 0.14

Legal Drain: No

Predominate Substrate: Silt

Estimated

Riparian Width (feet): 0

Estimated

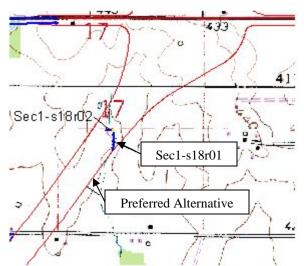


Photograph Looking Upstream

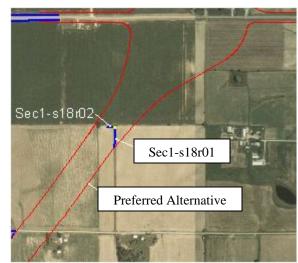


Photograph Looking Downstream

Stream Impact #18 (Stream ID - Sec 1-s18r01)



Site Location on Elberfeld USGS Quadrangle



Site Location on 2003 Aerial Photograph

Aquatic Resource: Stream Watershed: Smith Fk/Halfmoon CK

Stream Name: Unnamed Trib. to Smith Creek Channelized: Yes

County: Gibson IDEM 303(d) List: No

 PLSS:
 SE ¼ Section 17 T3S R9W
 OHWM Width ft:
 3

 UTME:
 461,782
 OHWM Depth ft:
 1.7

UTMN: 4,233,464 USACE Jurisdiction: Yes

USGS Quadrangle: Elberfeld IDEM Jurisdiction: Yes

Stream Sec 1-s18r01				
Stream Name	Length of Impact	Area Impacted	Alternative	Stream Habitat Assessment
Unnamed Trib. to Smith Creek	125 feet	0.01 acre	4	HHEI 25/Modified Class I

Stream Type: Intermittent

Evaluation Type: HHEI
Evaluation Score: 25

Watershed Area

(square miles): 0.09 Legal Drain: No

Predominate Substrate: Silt and Clay

Estimated

Riparian Width (feet): 8.2

Estimated

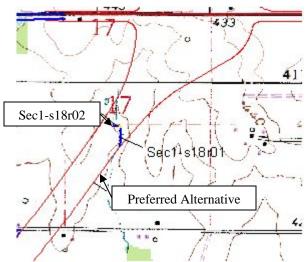


Photograph Looking Upstream

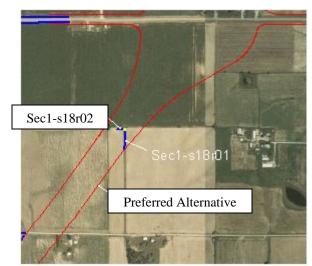


Photograph Looking Downstream

Stream Impact #19 (Stream ID - Sec 1-s18r02)







Site Location on 2003 Aerial Photograph

Aquatic Resource: Stream

Stream Name:

Gibson County:

PLSS: SE 1/4 Section 17 T3S R9W

461,764 UTMN: 4,233,495

UTME:

USGS Quadrangle: Elberfeld Watershed: Smith Fk/Halfmoon CK

Yes

IDEM 303(d) List: No

OHWM Width ft: 3

1.7 **OHWM Depth ft:**

USACE Jurisdiction: Yes

IDEM Jurisdiction: Yes

Stream Sec 1-s18r02				
Stream Name	Length of Impact	Area Impacted	Alternative	Stream Habitat Assessment
Unnamed Trib. to Smith Creek	275 feet	0.02 acre	4	HHEI 9/Modified Class I

Stream Type: Intermittent

Evaluation Type: HHEI

Evaluation Score: 9

Watershed Area

(square miles): 0.10 Legal Drain: No **Predominate Substrate:** Silt

Estimated

Riparian Width (feet): 0

Estimated

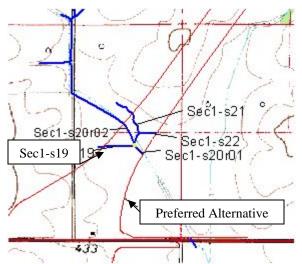


Photograph Looking Upstream

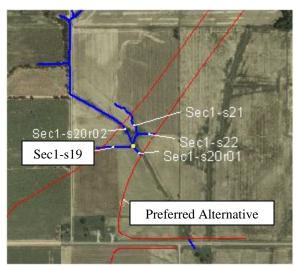


Photograph Looking Downstream

Stream Impact #20 (Stream ID - Sec 1-s19)



Site Location on Francisco USGS Quadrangle



Site Location on 2003 Aerial Photograph

Aquatic Resource: Stream Watershed: Smith Fk/Halfmoon Ck

Stream Name: Unnamed Trib. to Smith Creek Channelized: Yes

County: Gibson IDEM 303(d) List: No

PLSS: NE ¼ Section 17 T3S R9W OHWM Width ft: 3

 UTME:
 462,283
 OHWM Depth ft:
 1.5

 UTMN:
 4,234,265
 USACE Jurisdiction:
 Yes

USGS Quadrangle: Francisco **IDEM Jurisdiction:** Yes

Stream Sec 1-s19				
Stream Name	Length of Impact	Area Impacted	Alternative	Stream Habitat Assessment
Unnamed Trib. to Smith Creek	395 feet	0.03 acre	4	HHEI 10/Modified Class I

Stream Type: Ephemeral

Evaluation Type: HHEI Evaluation Score: 10

Watershed Area

(square miles): 0.06

Legal Drain: No

Predominate Substrate: Silt

Estimated

Riparian Width (feet): 0

Estimated

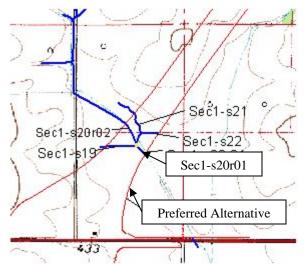


Photograph Looking Upstream

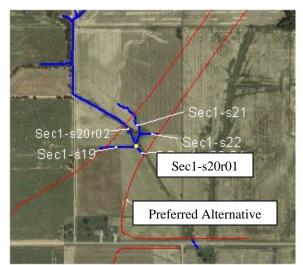


Photograph Looking Downstream

Stream Impact #21 (Stream ID - Sec 1-s20r01)







Site Location on 2003 Aerial Photograph

Aquatic Resource: Stream Watershed: Smith Fk/Halfmoon Ck

Stream Name: Unnamed Trib. to Smith Creek Channelized: Yes

County: Gibson IDEM 303(d) List: No

PLSS: NE ¼ Section 17 T3S R9W OHWM Width ft: 10

 UTME:
 462,361
 OHWM Depth ft:
 2

 UTMN:
 4,234,252
 USACE Jurisdiction:
 Yes

USGS Quadrangle: Francisco **IDEM Jurisdiction:** Yes

Stream Sec 1-s20r01				
Stream Name	Length of Impact	Area Impacted	Alternative	Stream Habitat Assessment
Unnamed Trib. to Smith Creek	190 feet	0.04 acre	4	QHEI 37

Stream Type: Intermittent

Evaluation Type: QHEI
Evaluation Score: 37

Watershed Area

(square miles): 1.46 Legal Drain: No

Predominate Substrate: Silt and Gravel

Estimated

Riparian Width (feet): 0

Estimated

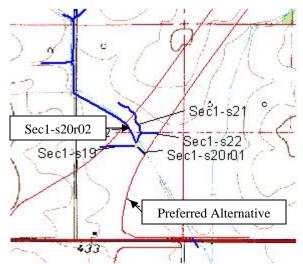


Photograph Looking Upstream

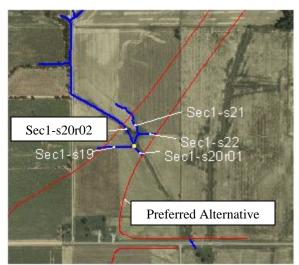


Photograph Looking Downstream

Stream Impact #21 (Stream ID - Sec 1-s20r02)







Site Location on 2003 Aerial Photograph

Aquatic Resource: Stream Watershed: Smith Fk/Halfmoon Ck

Stream Name: Unnamed Trib. to Smith Creek Channelized: No

County: Gibson IDEM 303(d) List: No PLSS: NE ¼ Section 17 T3S R9W OHWM Width ft: 10

UTME: 462,325 OHWM Depth ft: 2
UTMN: 4,234,322 USACE Jurisdiction: Yes

USGS Quadrangle: Francisco IDEM Jurisdiction: Yes

Stream Sec 1-s20r02				
Stream Name	Length of Impact	Area Impacted	Alternative	Stream Habitat Assessment
Unnamed Trib. to Smith Creek	565 feet	0.13 acre	4	QHEI 25

Stream Type: Intermittent

Evaluation Type: QHEI

Evaluation Score: 25

Watershed Area

(square miles): 1.33 Legal Drain: No

Predominate Substrate: Silt and Hardpan

Estimated

Riparian Width (feet): 0

Estimated

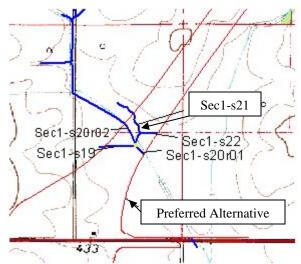


Photograph Looking Upstream

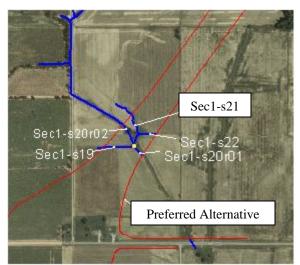


Photograph Looking Downstream

Stream Impact #22 (Stream ID - Sec 1-s21)



Site Location on Francisco USGS Quadrangle



Site Location on 2003 Aerial Photograph

Aquatic Resource: Stream Watershed: Smith Fk/Halfmoon Ck

Stream Name: Unnamed Trib. to Smith Creek Channelized: No County: Gibson IDEM 303(d) List: No

County: Gibson IDEM 303(d) List: No PLSS: NE ¼ Section 17 T3S R9W OHWM Width ft: 3

UTME: 462,350 **OHWM Depth ft:** 1

UTMN:4,234,355USACE Jurisdiction:YesUSGS Quadrangle:FranciscoIDEM Jurisdiction:Yes

Stream Sec 1-s21					
Stream Name	Length of Impact	Area Impacted	Alternative	Stream Habitat Assessment	
Unnamed Trib. to Smith Creek	295 feet	0.02 acre	4	HHEI 25/Modified Class I	

Stream Type: Ephemeral

Evaluation Type: HHEI

Evaluation Score: 25

Watershed Area

(square miles): 0.02

Legal Drain: No

Predominate Substrate: Silt

Estimated

Riparian Width (feet): 0

Estimated

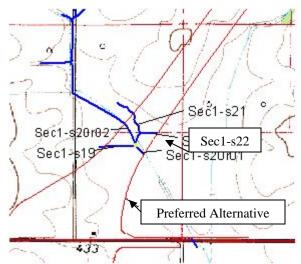


Photograph Looking Upstream

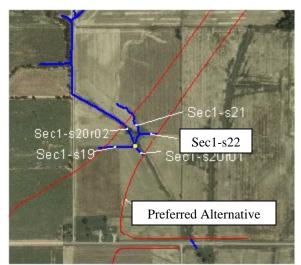


Photograph Looking Downstream

Stream Impact #23 (Stream ID - Sec 1-s22)



Site Location on Francisco USGS Quadrangle



Site Location on 2003 Aerial Photograph

Aquatic Resource: Stream Watershed: Smith Fk/Halfmoon Ck

Stream Name: Unnamed Trib. to Smith Creek Channelized: Yes

County: Gibson IDEM 303(d) List: No

PLSS: NE ¼ Section 17 T3S R9W OHWM Width ft: 3

UTME: 462,397 **OHWM Depth ft**: 1

UTMN:4,234,317USACE Jurisdiction:YesUSGS Quadrangle:FranciscoIDEM Jurisdiction:Yes

Stream Sec 1-s22				
Stream Name	Length of Impact	Area Impacted	Alternative	Stream Habitat Assessment
Unnamed Trib. to Smith Creek	405 feet	0.03 acre	4	HHEI 10/Modified Class I

Stream Type: Ephemeral

Evaluation Type: HHEI

Evaluation Score: 10

Watershed Area

(square miles): 0.01

Legal Drain: No

Predominate Substrate: Silt

Estimated

Riparian Width (feet): 0

Estimated

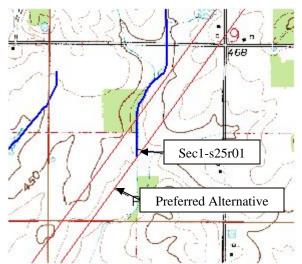


Photograph Looking Upstream

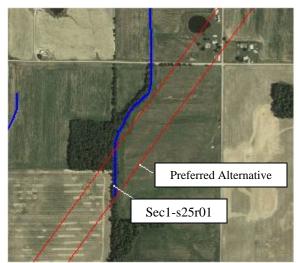


Photograph Looking Downstream

Stream Impact #24 (Stream ID - Sec 1-s25r01)



Site Location on Francisco USGS Quadrangle



Site Location on 2003 Aerial Photograph

Aquatic Resource: Stream Watershed: Smith Fk/Halfmoon Ck

Stream Name: Unnamed Trib. to Smith Creek Channelized: No

County: Gibson IDEM 303(d) List: No PLSS: SW ¼ Section 9 T3S R9W OHWM Width ft: 12

UTME:462,939OHWM Depth ft:2UTMN:4,235,102USACE Jurisdiction:YesUSGS Quadrangle:FranciscoIDEM Jurisdiction:Yes

Stream Sec 1-s25r01				
Stream Name	Length of Impact	Area Impacted	Alternative	Stream Habitat Assessment
Unnamed Trib. to Smith Creek	660 feet	0.18 acre	4	HHEI 61/Modified Class II

Stream Type: Intermittent

Evaluation Type: HHEI Evaluation Score: 61

Watershed Area

(square miles): 0.31

Legal Drain: No

Predominate Substrate: Gravel

Estimated

Riparian Width (feet): 15

Estimated

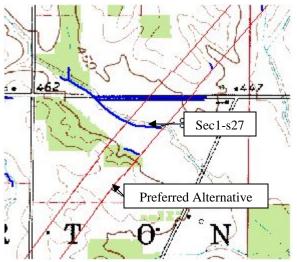


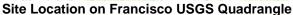
Photograph Looking Upstream

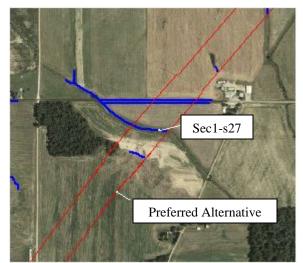


Photograph Looking Downstream

Stream Impact #25 (Stream ID - Sec 1-s27)







Site Location on 2003 Aerial Photograph

Aquatic Resource: Stream Watershed: Smith Fk/Halfmoon Ck

Stream Name:Halfmoon DitchChannelized:NoCounty:GibsonIDEM 303(d) List:No

PLSS: NE ¼ Section 9 T3S R9W OHWM Width ft: 12

UTME:463,747OHWM Depth ft:2UTMN:4,236,224USACE Jurisdiction:YesUSGS Quadrangle:FranciscoIDEM Jurisdiction:Yes

Stream Sec 1-s27				
Stream Name	Length of Impact	Area Impacted	Alternative	Stream Habitat Assessment
Halfmoon Ditch	450 feet	0.12 acre	4	QHEI 23

Stream Type: Intermittent

Evaluation Type: QHEI **Evaluation Score:** 23

Watershed Area

(square miles): 1.02 Legal Drain: No

Predominate Substrate: Gravel and Hardpan

Estimated

Riparian Width (feet): 0

Estimated

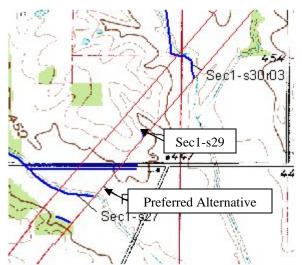


Photograph Looking Upstream

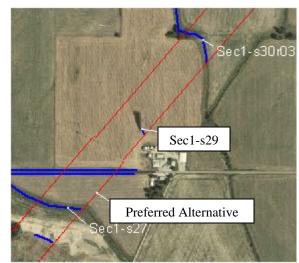


Photograph Looking Downstream

Stream Impact #26 (Stream ID - Sec 1-s29)







Site Location on 2003 Aerial Photograph

Aquatic Resource: Stream Watershed: Smith Fk/Halfmoon Ck

Stream Name:Unnamed Trib. to Halfmoon DitchChannelized:NoCounty:GibsonIDEM 303(d) List:No

PLSS: SE ¼ Section 4 T3S R9W OHWM Width ft: No OHWM UTME: 464,012 OHWM Depth ft: No OHWM

UTMN: 4,236,443 USACE Jurisdiction: Yes
USGS Quadrangle: Francisco IDEM Jurisdiction: Yes

Stream Sec 1-s29				
Stream Name	Length of Impact	Area Impacted	Alternative	Stream Habitat Assessment
Unnamed Trib. to Halfmoon Ditch	100 feet	0.01 acre	4	HHEI 10/Modified Class I

Stream Type: Ephemeral

Evaluation Type: HHEI Evaluation Score: 10

Watershed Area

(square miles): 0.02

Legal Drain: No

Predominate Substrate: Clay

Estimated

Riparian Width (feet): 0

Estimated

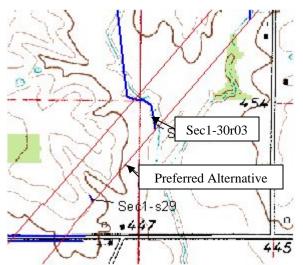


Photograph Looking Upstream

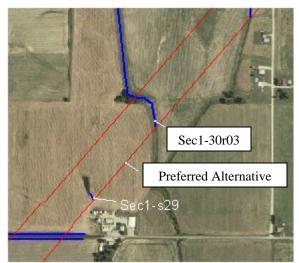


Photograph Looking Downstream

Stream Impact #27 (Stream ID - Sec 1-s30r03)







Site Location on 2003 Aerial Photograph

Aquatic Resource: Stream

Unnamed Trib. to Halfmoon Creek

County: Gibson

Stream Name:

PLSS: SW 1/4 Section 3 T3S R9W

UTME: 464,193

UTMN: 4,236,720

USGS Quadrangle: Francisco

Watershed: Smith Fk/Halfmoon Ck

Channelized: No

IDEM 303(d) List: No

OHWM Width ft: 12

OHWM Depth ft: 2

USACE Jurisdiction: Yes

IDEM Jurisdiction: Yes

Stream Sec 1-s30r03				
Stream Name	Length of Impact	Area Impacted	Alternative	Stream Habitat Assessment
Unnamed Trib. to Halfmoon Creek	465 feet	0.13 acre	4	HHEI 57/Modified Class II

Stream Type: Intermittent

Evaluation Type: HHEI

Evaluation Score: 57

Watershed Area

(square miles): 0.79

Legal Drain: No

Predominate Substrate: Clay

Estimated

Riparian Width (feet): 0

Estimated

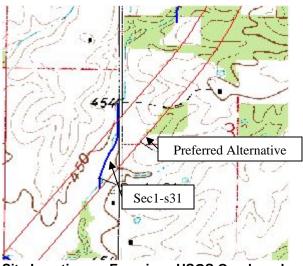


Photograph Looking Upstream

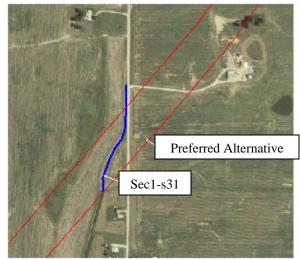


Photograph Looking Downstream

Stream Impact #28 (Stream ID - Sec 1-s31)







Site Location on 2003 Aerial Photograph

Aquatic Resource: Stream Watershed: Smith Fk/Halfmoon Ck

Unnamed Trib. to Halfmoon Ditch Channelized: **Stream Name:** Yes Gibson IDEM 303(d) List: No County: PLSS: SW 1/4 Section 3 T3S R9W OHWM Width ft: 4 UTME: 464,519 **OHWM Depth ft:** 1.2 UTMN: 4,237,093 **USACE Jurisdiction:** Yes **USGS Quadrangle:** Francisco **IDEM Jurisdiction:** Yes

Stream Sec 1-s31				
Stream Name	Length of Impact	Area Impacted	Alternative	Stream Habitat Assessment
Unnamed Trib. to Halfmoon Ditch	915 feet	0.08 acre	4	HHEI 45/Modified Class II

Stream Type: Intermittent

Evaluation Type: HHEI Evaluation Score: 45

Watershed Area

(square miles): 0.12

Legal Drain: No

Predominate Substrate: Gravel

Estimated

Riparian Width (feet): 0

Estimated

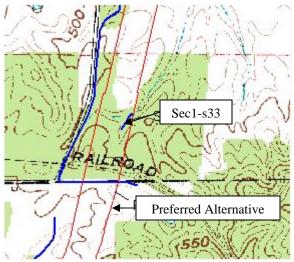


Photograph Looking Upstream

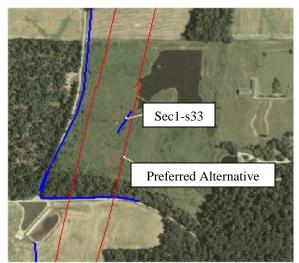


Photograph Looking Downstream

Stream Impact #29 (Stream ID - Sec 1-s33)







Site Location on 2003 Aerial Photograph

Yes

Aquatic Resource: Stream Watershed: Keg Ck/W. Fork Keg Ck

Stream Name: Unnamed Trib. to W. Fork Keg Ck Channelized: No Gibson IDEM 303(d) List: County: No PLSS: SE 1/4 Section 34 T2S R9W **OHWM Width ft:** 2 465,140 **UTME: OHWM Depth ft:** 0.3 UTMN: 4,238,224 **USACE Jurisdiction:** Yes

Stream Sec 1-s33				
Stream Name	Length of Impact	Area Impacted	Alternative	Stream Habitat Assessment
Unnamed Trib. to W. Fork Keg Ck	265 feet	0.01 acre	4	HHEI 25/Modified Class I

IDEM Jurisdiction:

Stream Type: Intermittent

Evaluation Type: HHEI Evaluation Score: 25

USGS Quadrangle: Francisco

Watershed Area

(square miles): 0.03 Legal Drain: No

Predominate Substrate: Silt and Clay

Estimated

Riparian Width (feet): 30

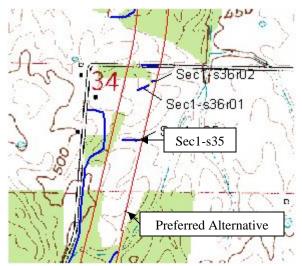
Estimated



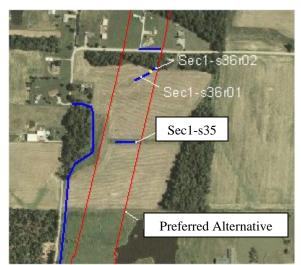


Photograph Looking Downstream

Stream Impact #30 (Stream ID - Sec 1-s35)







Site Location on 2003 Aerial Photograph

Aquatic Resource: Stream Watershed: Keg Ck/W. Fork Keg Ck

Stream Name: Unnamed Trib. to W. Fork Keg Ck Channelized: No Gibson IDEM 303(d) List: County: No PLSS: SE 1/4 Section 34 T2S R9W **OHWM Width ft:** 2 **UTME:** 465,210 OHWM Depth ft: 8.0 UTMN: 4,238,641 **USACE Jurisdiction:** Yes **USGS Quadrangle:** Francisco **IDEM Jurisdiction:** Yes

Stream Sec 1-s35				
Stream Name	Length of Impact	Area Impacted	Alternative	Stream Habitat Assessment
Unnamed Trib. to W. Fork Keg Ck	260 feet	0.01 acre	4	HHEI 10/Modified Class I

Stream Type: Ephemeral

Evaluation Type: HHEI

Evaluation Score: 10

Watershed Area

(square miles): 0.01 Legal Drain: No

Predominate Substrate: Clay and Silt

Estimated

Riparian Width (feet): 0

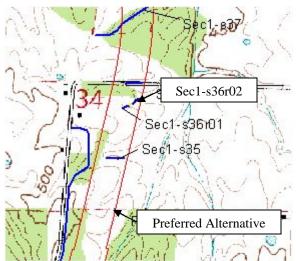
Estimated



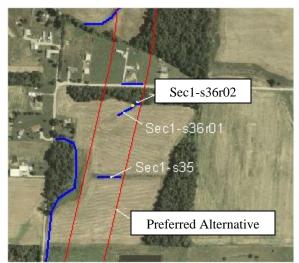
Photograph Looking Upstream



Stream Impact #31 (Stream ID - Sec 1-s36r02)







Site Location on 2003 Aerial Photograph

Aquatic Resource: Stream Watershed: Keg Ck/W. Fork Keg Ck

Stream Name: Unnamed Trib. to W. Fork Keg Ck Channelized: Yes Gibson IDEM 303(d) List: No County: PLSS: SE 1/4 Section 34 T2S R9W **OHWM Width ft:** 2 465,289 **UTME:** OHWM Depth ft: 0.3 UTMN: 4,238,845 **USACE Jurisdiction:** Yes

USGS Quadrangle: Francisco IDEM Jurisdiction: Yes

Stream Sec 1-s36r02				
Stream Name	Length of Impact	Area Impacted	Alternative	Stream Habitat Assessment
Unnamed Trib. to W. Fork Keg Ck	66 feet	0.01 acre	4	HHEI 10/Modified Class I

Stream Type: Ephemeral

Evaluation Type: HHEI

Evaluation Score: 10

Watershed Area

(square miles): 0.01

Legal Drain: No

Predominate Substrate: Clay

Estimated

Riparian Width (feet): 100

Estimated

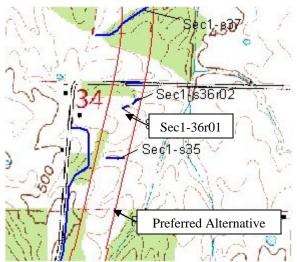


Photograph Looking Upstream

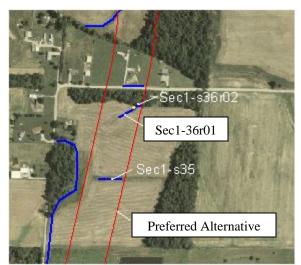


Photograph Looking Downstream

Stream Impact #32 (Stream ID - Sec 1-s36r01)







Site Location on 2003 Aerial Photograph

Aquatic Resource: Stream Watershed: Keg Ck/W. Fork Keg Ck

Stream Name: Unnamed Trib. to W. Fork Keg Ck Channelized: No Gibson IDEM 303(d) List: County: No PLSS: SE 1/4 Section 34 T2S R9W **OHWM Width ft:** 2 **UTME:** 465,265 **OHWM Depth ft:** 0.3 UTMN: 4,238,825 **USACE Jurisdiction:** Yes **USGS Quadrangle:** Francisco **IDEM Jurisdiction:** Yes

Stream Sec 1-s36r01				
Stream Name	Length of Impact	Area Impacted	Alternative	Stream Habitat Assessment
Unnamed Trib. to W. Fork Keg Ck	225 feet	0.01 acre	4	HHEI 9/Modified Class I

Stream Type: Ephemeral

Evaluation Type: HHEI

Evaluation Score: 9

Watershed Area

(square miles): 0.01

Legal Drain: No

Predominate Substrate: Silt

Estimated

Riparian Width (feet): 0

Estimated



Photograph Looking Upstream

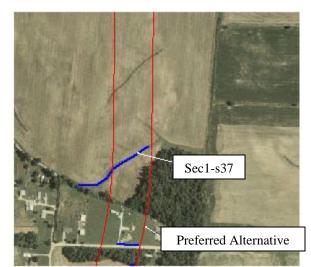


Photograph Looking Downstream

Stream Impact #33 (Stream ID - Sec 1-s37)







Site Location on 2003 Aerial Photograph

Aquatic Resource: Stream Watershed: Keg Ck/W. Fork Keg Ck

Unnamed Trib. to W. Fork Keg Ck Channelized: **Stream Name:** No Gibson IDEM 303(d) List: County: No PLSS: NE 1/4 Section 34 T2S R9W **OHWM Width ft:** 1 **UTME:** 465,274 OHWM Depth ft: 0.4 UTMN: 4,239,134 **USACE Jurisdiction:** Yes USGS Quadrangle: Francisco IDEM Jurisdiction: Yes

Stream Sec 1-s37				
Stream Name	Length of Impact	Area Impacted	Alternative	Stream Habitat Assessment
Unnamed Trib. to W. Fork Keg Ck	495 feet	0.01 acre	4	HHEI 10/Modified Class I

Stream Type: Ephemeral

Evaluation Type: HHEI Evaluation Score: 10

Watershed Area

(square miles): 0.04 Legal Drain: No

Predominate Substrate: Clay and Silt

Estimated

Riparian Width (feet): 0

Estimated

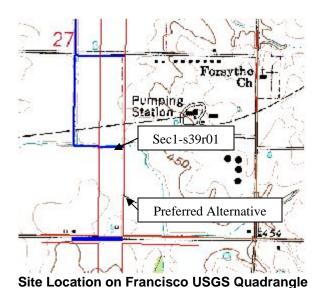


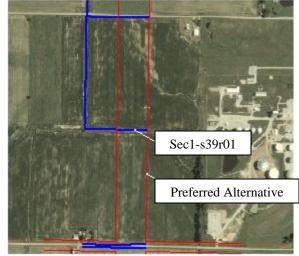
Photograph Looking Upstream



Photograph Looking Downstream

Stream Impact #34, #39, and #40 (Stream ID - Sec 1-s39r01)





Site Location on 2003 Aerial Photograph

Aquatic Resource: Stream Watershed: Keg Ck/W. Fork Keg Ck

Stream Name: West Fork Keg Ck Channelized: No Gibson IDEM 303(d) List: County: No PLSS: SE 1/4 Section 27 T2S R9W **OHWM Width ft:** 9 465,305 **UTME: OHWM Depth ft:** 1.7 UTMN: 4,240,102 **USACE Jurisdiction:** Yes **USGS Quadrangle:** Francisco **IDEM Jurisdiction:** Yes

Stream Sec 1-s39r01				
Stream Name	Length of Impact	Area Impacted	Alternative	Stream Habitat Assessment
West Fork Keg Ck	950 feet	0.20 acre	4	QHEI 32

Stream Type: Intermittent

Evaluation Type: QHEI Evaluation Score: 32

Watershed Area

(square miles): 5.11 Legal Drain: No

Predominate Substrate: Gravel and Hardpan

Estimated

Riparian Width (feet): 0

Estimated

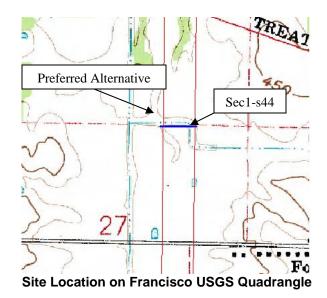


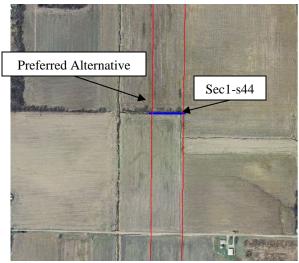
Photograph Looking Upstream



Photograph Looking Downstream

Stream Impact #35 (Stream ID - Sec 1-s44)





Site Location on 2003 Aerial Photograph

Yes

Aquatic Resource: Stream Watershed: Keg Ck/W. Fork Keg Ck

Stream Name: Unnamed Trib. to W. Fork Keg Ck Channelized: Yes County: Gibson IDEM 303(d) List: No SE 1/4 Section 22 T2S R9W PLSS: OHWM Width ft: 3 UTME: 465,327 **OHWM Depth ft:** 0.4 UTMN: 4,241,536 **USACE Jurisdiction:** Yes

Stream Sec 1-s44				
Stream Name	Length of Impact	Area Impacted	Alternative	Stream Habitat Assessment
Unnamed Trib. to W. Fork Keg Ck	385 feet	0.03 acre	4	HHEI 35/Modified Class II

IDEM Jurisdiction:

Stream Type: Intermittent

Evaluation Type: HHEI Evaluation Score: 35

USGS Quadrangle: Francisco

Watershed Area

(square miles): 0.22 Legal Drain: No

Predominate Substrate: Clay and Silt

Estimated

Riparian Width (feet): 0

Estimated

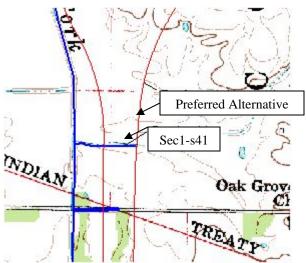


Photograph Looking Upstream

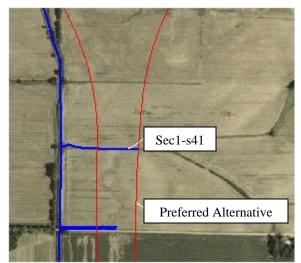


Photograph Looking Downstream

Stream Impact #36 (Stream ID - Sec 1-s41)







Site Location on 2003 Aerial Photograph

Yes

Aquatic Resource: Stream Watershed: Keg Ck/W. Fork Keg Ck

Stream Name: Unnamed Trib. to W. Fork Keg Ck Channelized: Yes Gibson IDEM 303(d) List: County: No PLSS: SE 1/4 Section 22 T2S R9W **OHWM Width ft:** 3 **UTME:** 465,327 **OHWM Depth ft:** 0.4 UTMN: 4,241,536 **USACE Jurisdiction:** Yes

Stream Sec 1-s41				
Stream Name	Length of Impact	Area Impacted	Alternative	Stream Habitat Assessment
Unnamed Trib. to W. Fork Keg Ck	385 feet	0.03 acre	4	HHEI 35/Modified Class II

IDEM Jurisdiction:

Stream Type: Intermittent

Evaluation Type: HHEI Evaluation Score: 35

USGS Quadrangle: Francisco

Watershed Area

(square miles): 0.22 Legal Drain: No

Predominate Substrate: Clay and Silt

Estimated

Riparian Width (feet): 0

Estimated

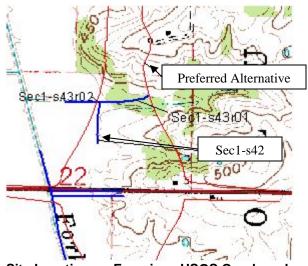


Photograph Looking Upstream

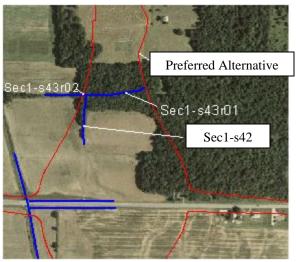


Photograph Looking Downstream

Stream Impact #37 (Stream ID - Sec 1-s42)







Site Location on 2003 Aerial Photograph

Yes

Aquatic Resource: Watershed: Keg Ck/W. Fork Keg Ck

Stream Name: Unnamed Trib. to W. Fork Keg Ck Channelized: Yes Gibson IDEM 303(d) List: County: No PLSS: NE 1/4 Section 22 T2S R9W **OHWM Width ft:** 6 **UTME:** 465,242 **OHWM Depth ft:** 1.3 UTMN: 4,242,355 **USACE Jurisdiction:** Yes

Stream Sec 1-s42				
Stream Name	Length of Impact	Area Impacted	Alternative	Stream Habitat Assessment
Unnamed Trib. to W. Fork Keg Ck	385 feet	0.05 acre	4	HHEI 29/Modified Class I

IDEM Jurisdiction:

Stream Type: Ephemeral

Evaluation Type: HHEI **Evaluation Score:** 29

USGS Quadrangle: Francisco

Watershed Area

(square miles): 0.04 Legal Drain: No Silt

Predominate Substrate:

Estimated

Riparian Width (feet): 20

Estimated

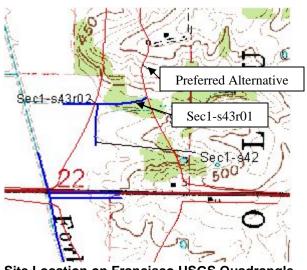


Photograph Looking Upstream

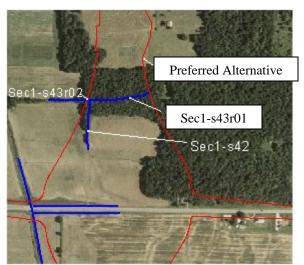


Photograph Looking Downstream

Stream Impact #38 (Stream ID - Sec 1-s43r01)







Site Location on 2003 Aerial Photograph

Yes

Aquatic Resource: Watershed: Keg Ck/W. Fork Keg Ck

Stream Name: Unnamed Trib. to W. Fork Keg Ck Channelized: No Gibson IDEM 303(d) List: County: No PLSS: NE 1/4 Section 22 T2S R9W **OHWM Width ft:** 6 **UTME:** 465,338 **OHWM Depth ft:** 0.5 UTMN: 4,242,440 **USACE Jurisdiction:** Yes

Stream Sec 1-s43r01				
Stream Name	Length of Impact	Area Impacted	Alternative	Stream Habitat Assessment
Unnamed Trib. to W. Fork Keg Ck	100 feet	0.01 acre	4	HHEI 25/Modified Class I

IDEM Jurisdiction:

Stream Type: Intermittent

Evaluation Type: HHEI

Evaluation Score: 25

USGS Quadrangle: Francisco

Watershed Area

(square miles): 0.10 Legal Drain: No **Predominate Substrate:** Clay

Estimated

Riparian Width (feet): 440

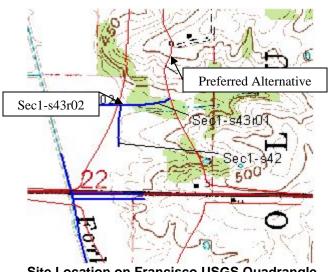
Estimated

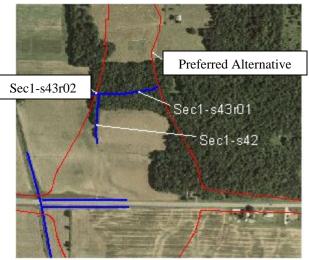




Photograph Looking Downstream

Stream Impact #38 (Stream ID - Sec 1-s43r02)





Site Location on Francisco USGS Quadrangle

Site Location on 2003 Aerial Photograph

Aquatic Resource: Stream Watershed: Keg Ck/W. Fork Keg Ck

Stream Name: Unnamed Trib. to W. Fork Keg Ck Channelized: No Gibson IDEM 303(d) List: County: No PLSS: NE 1/4 Section 22 T2S R9W **OHWM Width ft:** 6 **UTME:** 465,237 **OHWM Depth ft:** 0.6 UTMN: 4,242,440 **USACE Jurisdiction:** Yes

USGS Quadrangle: Francisco **IDEM Jurisdiction:** Yes

Stream Sec 1-s43r02				
Stream Name	Length of Impact	Area Impacted	Alternative	Stream Habitat Assessment
Unnamed Trib. to W. Fork Keg Ck	515 feet	0.07 acre	4	HHEI 22/Modified Class I

Stream Type: Intermittent

Evaluation Type: HHEI **Evaluation Score:** 22

Watershed Area

(square miles): 0.15 Legal Drain: No Clay

Predominate Substrate:

Estimated

Riparian Width (feet): 440

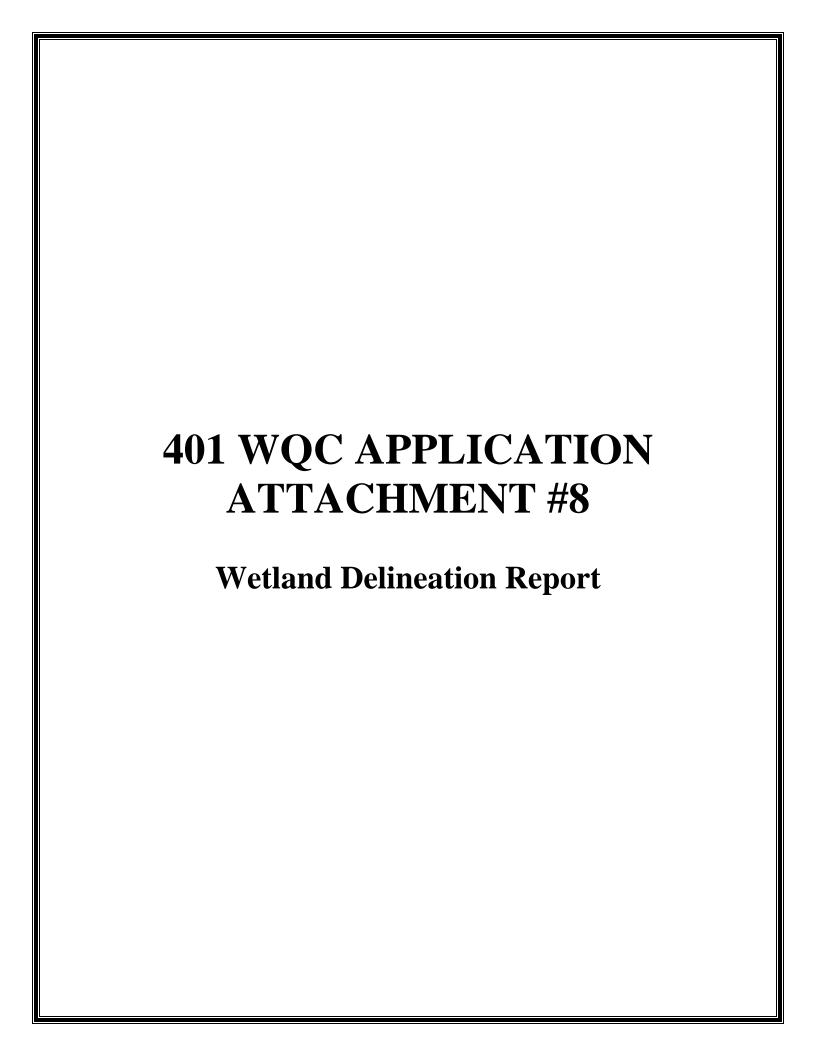
Estimated



Photograph Looking Upstream



Photograph Looking Downstream



Wetland Delineation Report

I-69 Section 1 In Vanderburgh, Warrick, and Gibson Counties, Indiana

DES# 0300377

August 27, 2007

Prepared by:

Bernardin · Lochmueller and Associates, Inc. 6200 Vogel Road Evansville, Indiana 47715

Prepared for:

Indiana Department of Transportation
Environmental Assessment Section
Environmental, Planning and Engineering Division
Government Center North, Room N642
100 North Senate Avenue
Indianapolis, Indiana 46204-2249

Table of Contents

I	Project Description	. 1
П	Section 404 "Waters of the United States," "Waters of the State," and Wetlands	. 1
Ш	Wetland Determination Methodology	. 2
IV	Preliminary Review	. 4
V	Field Investigation	. 5
VI	Investigation Findings	. 5
VII	Regulatory Involvement	. 8
VIII	Summary	. 9
Figur	e 1 I-69 Section 1 Preferred Alternative Shown on USGS Topographic Map with floodplain dat	а
Table	Table 1: Summary of I-69 Section 1 Project Wetland Impacts	
Appe	ndix A Routine Wetland Determination Forms	

Wetland Delineation Report I-69 Section 1 Project Vanderburgh, Gibson, and Warrick Counties, Indiana

I. Project Description

In general, the project consists of constructing a new roadway in Vanderburgh, Gibson, and Warrick counties, Indiana starting at the interchange of Interstate 64 and State Route 57 and Interstate 164 and continuing in a northward direction on new alignment and ending at State Route 64 just to the west of Oakland City, Indiana. The total length of the project is approximately 13 miles.

The project is located in Vanderburgh, Gibson, and Warrick counties in close proximity to State Route 57 (Attachment #5). The majority of this project is within agricultural settings and small woodlots, with a small portion of residential land (Attachment #6). There are 12 wetland impacts and 2 pond impacts that were identified within the proposed new right-of-way for the I-69 Section 1 Preferred Alternative. Attachment #7 contains impact site forms for each of the 12 wetland impacts and 2 pond impacts associated with this project. Routine Wetland Delineation Forms for each of the 12 wetland impact sites are located in Appendix A. Also included with this report are wetland assessment data sheets completed using the Indiana Wrapped Assessment Protocol (InWRAP) developed by Taylor University (Attachment #15).

II. Section 404 "Waters of the United States," "Waters of the State," and Wetlands

In 1972 Congress amended the Federal Water Pollution Control Act of 1948 (Clean Water Act) to include Section 404 which regulates the discharge of fill or dredged material into all "waters of the United States." Guidelines for implementation of the Section 404 program were jointly developed by the Environmental Protection Agency (USEPA) and the Corps of Engineers (USACE). Administration of the program, including issuance of discharge permits, is the responsibility of the USACE. The EPA is however "authorized to prohibit the specification (including the withdrawal of specification) of any defined area as a disposal site" as well as "deny or restrict the use of any defined area for specification (including the withdrawal of specification) as a disposal site..." Section 1 of the I-69 Project is within the jurisdiction of the USACE Louisville District office.

"Waters of the United States" is an all encompassing term used to include a wide range of both deep water aquatic habitats and special aquatic sites. Special aquatic sites are defined as "geographic areas, large or small, possessing special ecological characteristics of productivity, habitat, wildlife protection, or other important and easily disrupted ecological values" [40 CFR 230.3(q-1)]. Six special aquatic site categories have been identified by the EPA [40 CFR 230.40-230.45]:

(1) sanctuaries and refuges

(4) vegetated shallows

(2) wetlands

(5) coral reefs

(3) mudflats

(6) riffle and pool complexes

Wetlands as defined by the EPA [40 CFR 230.3(t)] and the COE [33 CFR 328.3(b)] include "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

The Indiana Department of Environmental Management (IDEM) regulates "Waters of the State." IDEM is responsible for issuing Water Quality Certifications (WQC) in Indiana. IDEM is charged with maintaining the chemical, physical and biological integrity of Indiana waters through its WQC program. Section 401 of the Clean Water Act requires any applicant for a federal permit through the USACE to conduct any activity that may result in a discharge of pollutants to water (including wetlands) to first obtain a WQC. If the USACE determines that a federal permit is not needed under Section 404 of the Clean Water Act, authorization by IDEM is still likely needed. This is likely to be the case of "isolated wetlands" where the USACE has determined that it has no basis for federal jurisdiction. IDEM regulates impacts to isolated wetlands under its Isolated Wetlands Regulatory Program (327 IAC 2).

III. Wetland Determination Methodology

Wetland determinations and delineations were performed in accordance with the *Corps of Engineers Wetland Delineation Manual (1987)* and all subsequent USACE guidance releases. Non-wetland "waters of the United States" were determined and described in accordance with the definitions in 33 CFR 328.3 and the wetland delineation manual. Classifications assigned to those wetlands identified and described in this study follow the classification system developed for the Fish and Wildlife Service, U. S. Department of the Interior, by Cowardin *et al.* (1979).

The Corps of Engineers Wetland Delineation Manual (1987) was developed to establish a universal methodology for determining and delineating jurisdictional wetlands. In keeping with the intent of the wetland definition, this methodology was based on a three parameter approach which requires that any one given site exhibit hydrophytic vegetation, hydric soils and wetland hydrology to qualify as a jurisdictional wetland. While normally all three criteria are required in order for such a designation, atypical or problem areas may exist where circumstances are such that only two criteria are necessary. Atypical situations include the unauthorized discharges or clearing of vegetation within a wetland, episodic acts of nature (beaver dams, fires, avalanches, etc.) and maninduced wetlands (impoundments).

Hydrophytic Vegetation

The Corps of Engineers Wetland Delineation Manual defines hydrophytic vegetation as the "sum total of macrophytic plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present." The USACE places emphasis on the assemblage of plant species rather than on indicator species to assess a sites hydrophytic status. The "prevalence of vegetation" for a specific area is based on the dominant plant species, which characterize the community. The task of determining whether the dominant plant species represent that of a wetland community was simplified through the development of the National List of Plant Species That Occur in Wetlands by the U.S. Fish and Wildlife Service (USFWS) in cooperation with the USACE, EPA, and the Soil Conservation Service. The five primary indicator categories used to classify a species' probability of occurring in a wetland are:

Obligate Wetland (OBL) - Occur almost always (estimated probability >99%) under natural conditions in wetlands

Facultative Wetland (FACW) - Usually occur in wetlands (estimated probability 67% - 99%), but occasionally found in non-wetlands.

Facultative (FAC) - Equally likely to occur in wetlands or non-wetlands (estimated probability 34% - 66%).

Facultative Upland (FACU) - Usually occur in non-wetlands (estimated probability 67% - 99%), but occasionally found in wetlands (estimated probability 1% - 33%).

Obligate Upland (UPL) - Occur in wetland in another region, but occur almost always (estimated probability >99%) under natural conditions in non-wetlands in the region specified.

Each of the Facultative categories may be further qualified by a positive (+) or negative (-) sign to designate relative frequencies toward wetter or drier conditions within that category. The positive sign indicates a frequency toward the higher end of the category (more frequently found in wetlands), while the negative sign indicates a frequency toward the lower end of the category (less frequently found in wetlands). The hydrophytic vegetation criteria is said to be satisfied if more than 50% of the dominant species for each of the vegetative strata are OBL, FACW or FAC (except FAC-).

Hydric Soils

The National Technical Committee for Hydric Soils defines hydric soils as soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part. The anaerobic conditions hydric soils are subjected to during periodic or permanent inundation or saturation results in the chemical reduction of certain soil components, which are exhibited in the physical attributes of the soil.

Soils are typically described in terms of characteristics such as color, mottling, texture and structure. Soil color documentation is based on the Munsell notation system, which uses a combination of *hue*, *value* and *chroma* variables as descriptors. *Hue* expresses a color's relation to red, yellow, green, blue, and purple, and is designated by a number from 0 to 10 followed by a letter abbreviation (R = red, YR = yellow-red, Y = yellow). Within each letter range, the hue becomes more yellow and less red as the number increases. The range of hues for gleyed soils includes yellow (5Y), green-yellow (5GY), green (5G), blue-green (5BG) and blue (5B). *Value* indicates a color's lightness and is designated by a number from 0 (absolute black) to 10 (absolute white). *Chroma* indicates a colors strength or departure from a neutral of the same lightness. Within the Munsell Soil Color Chart chroma ranges from 0 for neutral to 8. Soil color is typically determined using a moist soil sample. Neutral colored soils with no hue and a chroma of zero are designated with the letter N on the gley page.

Mottling, the presence of brightly contrasting spots of color within the soil matrix, is often indicative of a fluctuating water table. Mottles are also color graded using the Munsell system. A soils texture (e.g., sand, loamy sand, sandy loam, loam, silt loam, clay loam, clay) and structure (e.g. platy, prismatic, blocky, granular, etc.) are features which influence its porosity and permeability. These in turn determine the frequency and duration of saturation and inundation for a soil.

The USACE manual stipulates that unmottled mineral soils with a matrix chroma of 1 or less, and mottled mineral soils with a matrix chroma of 2 or less immediately below the A-horizon or at a depth of 10 inches (whichever is shallower) are indicative of hydric conditions. Gleyed (gray) soils resulting from the reduction of iron under waterlogged conditions are also an indicator of hydric soils when observed within the upper 10 inches. Other hydric soil indicators include the detection of hydrogen sulfide from permanently saturated soils, the presence of iron and manganese

concretions, and a positive α - α -dipyridil test for reducing conditions. Organic peat or muck soils (Histosols) are exclusively hydric.

Wetland Hydrology

The USACE defines wetland hydrology as the sum total of wetness characteristic in areas that are inundated or have saturated soils for a sufficient duration to support hydrophytic vegetation. The climate (temperature, precipitation, evaporation), local geology (parent material and soil properties), topography, surface drainage patterns, water table, and vegetative cover (evapotranspiration) are all factors which influence the hydrology and potential wetness of an area. Because inundation or soil surface saturation may only occur seasonally, indirect indicators of past hydrologic conditions must be sought to satisfy the criteria. Primary indicators of wetland hydrology include drainage patterns, drift lines, sediment deposition, watermarks on trees or other features, visual observation of saturated soils, and inundation. In addition to on-site evidence, recorded information such as stream gauge data, flood maps, historical records or previous hydraulic reports may also be of assistance in determining the frequency and duration of inundation. Oxidized root channels in the upper 12 inches, the presence of water stained leaves, local soil survey data, the FAC-neutral vegetation test and morphologic plant adaptations are secondary indicators of wetland hydrology. The 1987 wetland determination methodology requires that one primary indicator or two secondary indicators be identified as evidence of hydrology.

IV. Preliminary Review

Prior to the on-site investigation, standard sources of information were reviewed to assess the potential for encountering "Waters of the United States" and "Waters of the State," including wetlands, within the proposed project area.

USGS Topographic Maps

Section 1 of the I-69 Project area is located in Vanderburgh, Gibson, and Warrick counties, Indiana. The project area is located on the Elberfeld and Francisco Indiana USGS Quadrangle Maps (Attachment #5).

Soil Survey Data

The United States Department of Agriculture Soil Survey of Vanderburgh, Gibson, and Warrick counties, Indiana were consulted to identify the mapped soil series that occur in each of the 12 wetland impact areas identified. The following is a list of the soil series that were identified in the wetland impact areas within the Preferred Alternative right-of-way.

I-69 Section 1 Preferred Alternative Wetland Impact Sites Soils

Hosmer silt loam Iva silt loam Stendal silt loam Tartown silt loam

National Wetland Inventory Maps

Digital USFWS National Wetland Inventory (NWI) maps identified 8 wetlands within the I-69 Section 1 Preferred Alternative. The 8 NWI wetland within the Section 1 Preferred Alternative consisted of the following wetland types:

- 5 Palustrine Unconsolidated Bottom Wetlands (PUB)
- 2 Palustrine Forested Wetlands (PFO)

FEMA Flood Maps

Indiana Department of Natural Resources (IDNR) Division of Water Digital Flood Insurance Rate Map (FIRM) for Vanderburgh, Gibson, and Warrick counties were reviewed for this project. The FIRM map identified one floodplain area within the I-69 Section 1 Preferred Alternative right-of-way (Figure 1). The Pigeon Creek floodplain is crossed by the Section 1 Preferred Alternative.

V. Field Investigation

On-site field reconnaissance were conducted in June and July of 2004. At that time, the entire I-69 Section 1 area was reviewed to identify possible wetland impacts. Twelve (12) wetland areas and 2 ponds were identified during the 2004 field reconnaissance that will be impacted by the Section 1 Preferred Alternative. These wetlands and ponds are located in the Highland-Pigeon and Patoka River 8-digit watersheds.

VI. Investigation Findings

Wetlands

A total of 12 wetlands will be impacted by the proposed Preferred Alternative for Section 1 of the I-69 project. These consist of 1 palustrine forested wetland and 11 palustrine emergent wetland areas. The total area of wetland impacts associated with Section 1 of the I-69 project will be 1.18 acres. There are also 4 ponds located within the Preferred Alternative right-of-way for Section 1. The total impact area of these 4 ponds is 0.75 acre. Table 1 below identifies the wetland and pond impacts and acres of each wetland and pond impacted within the right-of-way.

Table 1. Sui	mmary of Wetland and Pond	Impacts within the	he I-69 Section	1 Preferred Alternative
ID#	Wetlands	Impacted Area	Jurisdiction	Classification (Cowardin)
Sec 1-w01	Forested	0.02 acre	Yes	PFO
Sec 1-w05	Emergent	0.01 acre	Yes	PEM
Sec 1-w07	Emergent	0.14 acre	Yes	PEM
Sec 1-w08	Emergent	0.26 acre	Yes	PEM
Sec 1-w10	Emergent	0.07 acre	Yes	PEM
Sec 1-w17	Emergent	0.06 acre	Yes	PEM
Sec 1-w18	Emergent	0.05 acre	Yes	PEM
Sec 1-w19	Emergent	0.16 acre	Yes	PEM
Sec 1-w24	Emergent	0.16 acre	Yes	PEM
Sec 1-w26	Emergent	0.09 acre	Yes	PEM
Sec 1-w28	Emergent	0.07 acre	Yes	PEM
Sec 1-w31	Emergent	0.09 acre	Yes	PEM
	Total Wetland Impacts	1.18 acres		
ID#	Ponds	Impacted Area	Jurisdiction	Classification (Cowardin)
Sec 1-w24	Pond with fringe wetland	0.32 acre	Yes	PUB
Sec 1-w28	Pond with fringe wetland	0.15 acre	Yes	PUB
Sec 1-p05	Pond with no fringe wetland	0.15 acre	Yes	PUB
Sec 1-p07	Pond with no fringe wetland	0.13 acre	Yes	PUB
	Total Pond Impacts	0.75 acre	-	-
	TOTAL IMPACTS	1.93 acres		

Wetland Impacts

The wetlands being impacted have a total area of 1.18 acres and the ponds being impacted have a total area of 0.75 acre. The wetlands and ponds are located throughout the Section 1 Preferred Alternative right-of-way (Attachment #5 and #6). Attachment #7 contains detailed impact site information on each of the wetland and pond impact areas. InWRAP was performed on all of the wetlands being impacted by the Section 1 Preferred Alternative (Attachment #15). Below is a brief description of each of the wetland and pond impact areas.

Wetland Sec 1-w01

Sec 1-w01 is a forested floodplain wetland, 0.06 acre in size. In terms of animal habitat, the wetland received a fair rating. It scored well because of dead woody material and tree canopy, but scored poorly because of the small size, lack of mature trees, and lack of zonation. Botanically, Sec 1-w01 scored poor because of the low number of hydrophytic dominant plant species and low conservatism rating. Hydrologically, the wetland has good water quality protection, but poor flood and storm water storage potential, giving it an overall hydrology rating of fair. Approximately 0.02 acre of this wetland will be impacted by this project.

Wetland Sec 1-w05

Sec 1-w05 is a wet meadow, 0.01 acre in size. In terms of animal habitat, the wetland received a poor rating. It scored poorly because it lacked standing water, dead woody material, tree canopy, mature trees, and vegetation zonation, interspersion and stratification. Botanically, Sec 1-w05 received a poor rating because of low numbers of hydrophytic species, low conservatism rating, and no indicator species present. Hydroloically, the wetland has fair water quality protection and flood and storm water storage potential, giving it an overall hydrology rating of fair. Approximately 0.01 acre of this wetland will be impacted by this project.

Wetland Sec 1-w07

Sec 1-w07 is a seasonally flooded basin, 0.23 acre in size. In terms of animal habitat, the wetland received a poor rating. It lacked tree canopy, dead woody material, and standing water. Botanically, Sec 1-w07 received a poor rating because of low numbers of hydrophytic species, low conservatism rating, and no indicator species present. Hydroloically, the wetland has good water quality protection and decent flood and storm water storage potential, giving it an overall hydrology rating of fair. Approximately 0.14 acre of this wetland will be impacted by this project.

Wetland Sec 1-w08

Sec 1-w08 is a seasonally flooded basin, 0.33 acre in size. In terms of animal habitat, the wetland received a poor rating. It lacked tree canopy, dead woody material, and standing water. Botanically, Sec 1-w08 received a poor rating because of low numbers of hydrophytic species, low conservatism rating, and no indicator species present. Hydroloically, the wetland has good water quality protection and poor flood and storm water storage potential, giving it an overall hydrology rating of fair. Approximately 0.26 acre of this wetland will be impacted by this project.

Wetland Sec 1-w10

Sec 1-w10 is a seasonally flooded basin, 0.07 acre in size. In terms of animal habitat, the wetland received a poor rating. It scored well because of its size and connectivity to other wetlands, but poorly because it lacked standing water, dead woody material, and tree canopy. Botanically, Sec 1-w10 received a poor rating because of low numbers of hydrophytic species, low conservatism

rating, and no indicator species present. Hydroloically, the wetland has decent water quality protection and flood and storm water storage potential, giving it an overall hydrology rating of fair. Approximately 0.07 acre of this wetland will be impacted by this project.

Wetland Sec 1-w17

Sec 1-w17 is a wet meadow wetland, 0.11 acre in size. In terms of animal habitat, the wetland received a poor rating due to its lack of standing water, dead woody material, tree canopy, and zonation. Botanically, Sec 1-w17 received a poor rating because of low numbers of hydrophytic species, low conservatism rating, and no indicator species present. Hydroloically, the wetland has decent water quality protection and decent flood and storm water storage potential, giving it an overall hydrology rating of fair. Approximately 0.06 acre of this wetland will be impacted by this project.

Wetland Sec1-w18

Sec 1-w18 is a wet meadow wetland, 0.12 acre in size. In terms of animal habitat, the wetland received a poor rating due to surrounding land use and its lack of standing water, tree canopy, dead woody material, and zonation. Botanically, Sec 1-w18 received a poor rating because it contained only one indicator species, low number of hydrophytic species, and no conservatism rating. Hydroloically, the wetland has poor water quality protection and low flood and storm water storage potential, giving it an overall hydrology rating of poor. Approximately 0.05 acre of this wetland will be impacted by this project.

Wetland Sec 1-w19

Sec 1-w19 is a seasonally flooded basin, 0.19 acre in size. In terms of animal habitat, the wetland received a poor rating. Although it scored well for zonation and interspersion of plant zones, dominance of agriculture as an adjacent land use, lack of dead woody material, lack of standing water, and lack of tree canopy, led to an overall low animal habitat score. Botanically, Sec 1-w19 received a poor rating because of low numbers of hydrophytic species, low conservatism rating, and no indicator species present. One exotic species was observed and its occurrence was frequent. Only four total species were observed in the wetland, and the species identified have an extremely low average coefficient of conservatism. Hydroloically, the wetland has medium water quality protection and decent flood and storm water storage potential, giving it an overall hydrology rating of fair. Approximately 0.16 acre of this wetland will be impacted by this project.

Wetland Sec 1-w24

Sec 1-w24 is an open water area with a seasonally flooded basin fringe, the seasonally flood basin fringe is 0.19 acre in size and the open water portion is 0.39 acre is size. In terms of animal habitat, the wetland received a fair rating. It scored well because of surrounding land use and the wetland's size and connectivity, but scored poorly because of its lack of dead woody material and tree canopy. Botanically, Sec 1-w24 received a poor rating because it had a low diversity of native wetland plants, and overall, only two hydrophytic species were observed. Hydroloically, the wetland has good water quality protection and flood and storm water storage potential, giving it an overall hydrology rating of fair. Approximately 0.16 acre of the seasonally flooded basin wetland will be impacted by this project and approximately 0.32 acre of the open water portion will be impacted.

Wetland Sec 1-w26

Sec 1-w26 is a wet meadow, 0.09 acre in size. In terms of animal habitat, the wetland received a fair rating. It scored well because of surrounding land use and the wetland's size and connectivity, but scored poorly because of its lack of dead woody material and tree canopy. Botanically, Sec 1-w26 received a poor rating because of low numbers of hydrophytic species, low conservatism rating, and no indicator species present. Hydroloically, the wetland has good water quality

protection and poor flood and storm water storage potential, giving it an overall hydrology rating of fair. Approximately 0.09 acre of this wetland will be impacted by this project.

Wetland Sec 1-w28

Sec 1-w28 is an open water area with a shallow marsh fringe, the shallow marsh fringe is 0.07 acre in size and the open water portion is 0.15 acre is size. In terms of animal habitat, the wetland received a fair rating. It scored well because of surrounding land use and the wetland's size and connectivity, but scored poorly because of its lack of dead woody material and tree canopy. Botanically, Sec 1-w28 received a poor rating because it had a low diversity of native wetland plants. Hydroloically, the wetland has good water quality protection and poor flood and storm water storage potential, giving it an overall hydrology rating of fair. Approximately 0.07 acre of the seasonally flooded basin wetland will be impacted by this project and approximately 0.15 acre of the open water portion will be impacted.

Wetland Sec 1-w31

Sec 1-w31 is comprised mostly of an excavated pond with a shallow marsh fringe, the shallow marsh fringe is 1.9 acres in size and the open water portion is 3.9 acres is size. In terms of animal habitat, the wetland received a fair rating. It scored well because of surrounding land use and wetland size, but scored poorly because of its lack of dead woody material and tree canopy. Botanically, Sec 1-w31 received a poor rating because it contained invasive species and had a relatively low diversity of native wetland plants. Hydroloically, the wetland has decent water quality protection and flood and storm water storage potential, giving it an overall hydrology rating of fair. Approximately 0.09 acre of the shallow marsh fringe of this wetland will be impacted by the project. The project will have no impacts on the open water portion of this wetland.

Ponds Sec 1-p05 and Sec 1-p07

Both Sec 1-p05 and Sec 1-p07 were artificially created for the purpose of aesthetics, wildlife habitat or stormwater treatment. Sec 1-p05 is approximately 0.97 acre is size and the Section 1 Preferred Alternative will impact approximately 0.15 acre of this pond. Sec 1-p07 is approximately 0.13 acre in size and the Section 1 Preferred Alternative will impact approximately 0.13 acre of this pond.

Additional information on the wetlands being impacted by the I-69 Section 1 Preferred Alternative may be found in Appendix A and Attachments #7 and #15.

VII. Regulatory Involvement

A Waters of the U.S. Jurisdictional Determination Report was submitted to the USACE on June 25, 2007. A letter dated August 17, 2007 from the US Army Corps of Engineers – Louisville District Office (USACE) states that the USACE has jurisdiction over all wetlands and streams identified within the I-69 Section 1 Preferred Alternative right-of-way. Therefore, there are no isolated wetland impacts within the Preferred Alternative right-of-way.

The Corps of Engineers exercises regulatory authority over activities involving the discharge of fill or dredged material into "Waters of the United States" and is responsible for enforcing compliance with the Environmental Protection Agency 404(b)(1) guidelines as a prerequisite to issuance of a Section 404 permit. Any and all parties proposing construction activities involving deposition of fill or dredged material, disruption or destruction through land clearing, and/or alteration of hydrology are required by law to submit for and obtain a permit through the Corps of Engineers before such activities can proceed. In general, Section 404 permits issued by the Louisville District Corps of

Engineers office fall into three categories for Indiana: Individual permits, nationwide permits, and the regional general permit.

Regulatory authority for Section 401 of the Clean Water Act is the responsibility of the Indiana Department of Environmental Management (IDEM). IDEM is charged with maintaining the chemical, physical and biological integrity of Indiana waters through its Water Quality Certification (WQC) program. Section 401, in concert with the Corps Section 404 program, insures that project activities impacting "Waters of the United States" and/or "Waters of the State", including wetlands, are conducted in compliance with the states water quality policies.

Section 404 individual permits (IP) are required for projects where the scope of work would result in significant and/or unique environmental impacts to "Waters of the United States" not covered in any of the pre-authorized nationwide permits. Briefly, the individual permit process involves: (1) submitting the appropriate application, (2) issuance of a public notice, (3) a 15 to 30 day comment period, (4) a review by federal, state and local agencies, as well as, special interest groups and the public, (5) a review of comments received, (6) possible request for additional information (7) a possible public hearing, and (8) the decision to issue or deny the permit. This process can take up to six or more months.

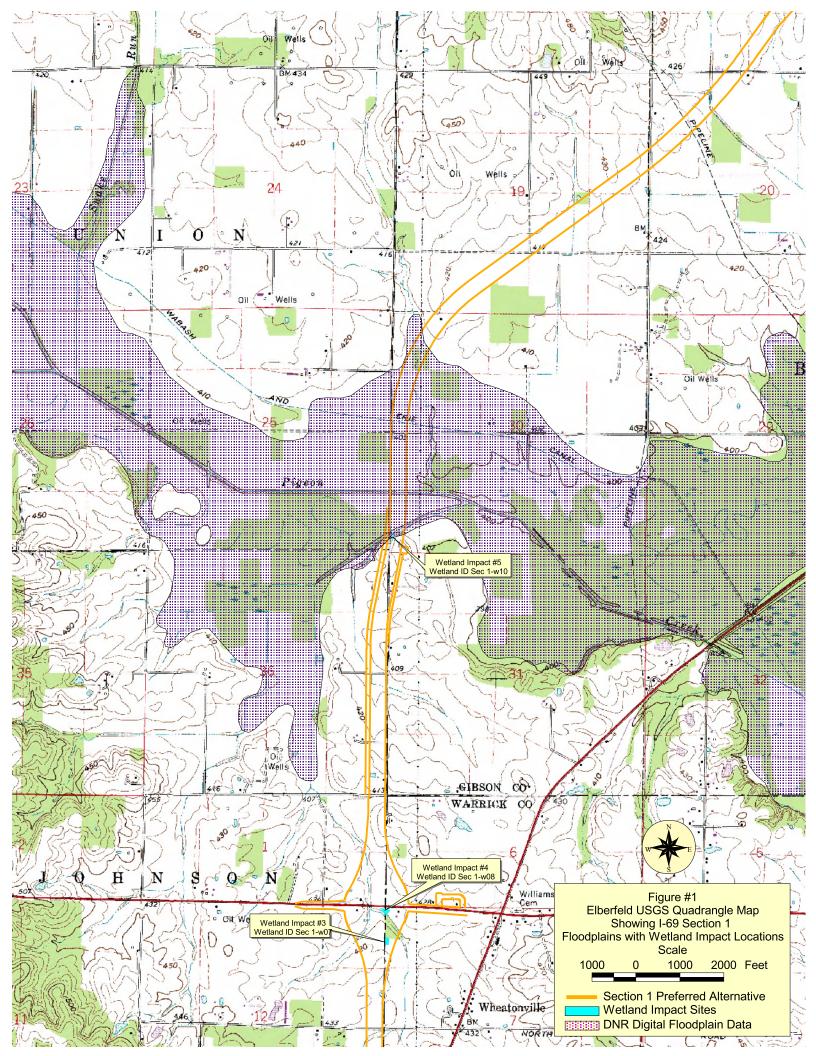
Section 404 nationwide permits have been established to streamline the permitting process by preauthorizing a variety of common activity which by there very nature result in only minor impacts to "Waters of the United States". Nationwide permits are advantageous because unlike the individual permit they forgo the need to issue a public notice, do not require a 15 to 30 day comment period, and are not subject to a public hearing. Projects meeting the qualifications for a specific nationwide permit must however still comply with the general and Section 404 specific conditions required, including notification of the District Engineer when applicable. Issuance of several of the nationwide permits also requires Section 401 Water Quality Certification (WQC) through the IDEM.

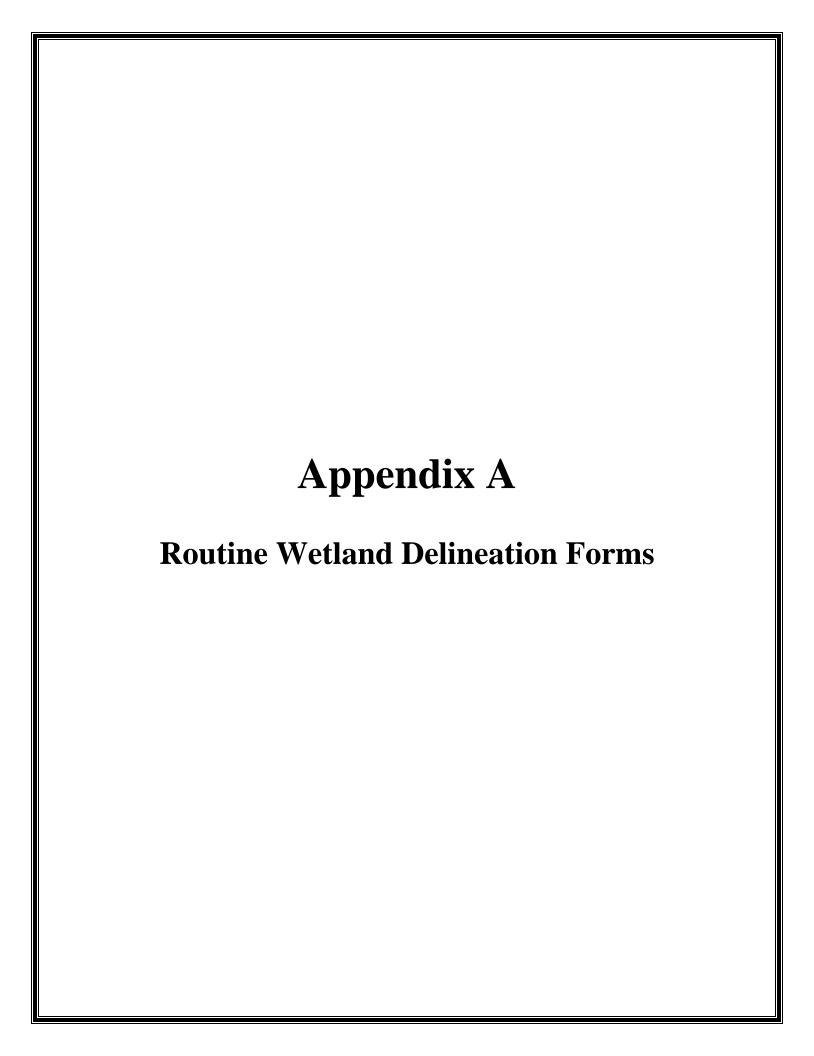
The Section 404 regional general permit (RGP) for Indiana was issued on February 11, 2000. It authorizes activities related to construction of new facilities or structures, which have minimal individual and cumulative impacts. This permit is applicable to activities involving (1) discharges of dredged or fill material into 1 acre or less of "Waters of the United States," including wetlands, (2) dredging in navigable waters up to 10,000 cubic yards, (3) structures and fills for docking and mooring similar to permitted structures and fills in the vicinity, and (4) discharges of dredged or fill material into Lake Michigan up to 0.10 acre except for bank stabilization. Under this regional general permit, discharges impacting less than 0.10 acre do not require USACE notification, but still necessitate that an application be submitted to the IDEM for WQC and the IDNR Division of Water for a Construction in a Floodway Permit, if applicable. Typical response time for the IDEM public notice period (21 days) and review process is 120 days from date of application. Upon receiving the IDEM's Section 401 approval, the Corps begins its formal review of the project. Response from the Corps is typically within 45 days.

VIII. Summary

The June and July of 2004, a wetland investigation for the proposed I-69 Section 1 project in Vanderburgh, Gibson, and Warrick counties, Indiana resulted in the identification of 12 wetland areas and 2 ponds that will be impacted by the Preferred Alternative. Approximately 0.02 acre of forested wetland, 1.16 acre of emergent wetlands, and 0.75 acre of ponds will be impacted by the I-69 Section 1 Preferred Alternative. Normal circumstances were considered to exist at the wetland impact sites and no atypical situations or potential problems were identified on-site. Coordination

with the Army Corps of Engineers, the Indiana Department of Environmental Management on this project is ongoing. Mitigation for impacts to the 0.02 acre of forested wetland will be complete at a 3:1 mitigation ratio and mitigation for the 1.16 acres of emergent wetlands will be completed at a 2:1 ratio. The ponds will be mitigated at a 1:1 ratio. A wetland mitigation site of approximately 5 acres is being developed to compensate for the impacts of the I-69 Section 1 Preferred Alternative.





			WEILAND	CEINEATION			
Feature ID:	Sec1-W0)1 (W01001)	_			Segment:	1
Project/Site:	1-69					Date:	6/18/2004
Client:	QK4		····			_	
		ND				County: _	Vanderburgh
Investigator(s):	MWW, C	ND				State:	1N
Aerial Sheet No.:	: <u>1</u>					Approx MP:	
							
		WETLAND				JPLAND	·
Normal Circumstance	es?	X Yes	No	Normal Circumstan		Yes	N-
Significantly Disturbe		Yes	X No		_		_No
Potential Problem A		Yes	X No	Significantly Disturb	_		No
FOLEIILIAI FIODICIII AI	104:		<u>~ NO</u>	Potential Problem A	\rea?	_Yes <u>></u>	<u> </u>
USACE Jurisdictions	al?	Yes	X No	USACE Jurisdiction	nal?	Yes	<u>(</u> No
		EGETATION	· · · · · · · · · · · · · · · · · · ·	<u></u>			·
DOMINANT C						GETATION	*
DOMINANT SI	PECIES	STRATUM	INDICATOR	DOMINANT S		STRATUM	INDICATOR
Acer saccharinum		Tree	FACW	Fraxinus americana		Tree	FACU
Ulmus americana		Tree	FACW-	Parthenocissus qui	nquefolia	Vine	FAC-
Leersia virginica		Herb	OBL	Lonicera japonica		Vine	FACU
Impatiens capensis		Herb	FACW				
Toxicodendron radio	ans	Vine	FAC+				
Polygonum hydropip	er	Herb	OBL			···	
							
Percent of Species (OBL, FACW,	FAC (excl. FAC-)	100%	Percent of Species	OBL, FACW, F	AC (excl. FAC-)	0%
Remarks:	Meets the	hydrophytic vegetation c	riterion.	Remarks:	Does not me	et the hydrophytic vegeta	tion criterion
						, , ,	
	Н	YDROLOGY			HY	DROLOGY	
Field Indicators:	Depth of S	urface Water:	None	Field Indicators:	Depth of Surf	ace Water:	None
	Depth to F	ree Water:	>16"		Depth to Free	_	>16"
	Depth to S	aturated Soil:	>16"		Depth to Sati	_	>16"
PRIMARY INDICAT		SECONDARY INDI		PRIMARY INDICAT	•	SECONDARY INDICA	
Inundated	Onto	Ox. root channels	CATORS		IOKS		IORS
		Water-stained leave	. ———	Inundated		Ox. root channels	
Saturated <12"				Saturated <12"		Water-stained leaves	
Water marks		_ Local soil survey da	ta	Water marks		Local soil survey data	
Sediment deposit		FAC- Neutral test		Sediment deposit		FAC- Neutral test	_
Drainage patterns	X	Other (ex. in Remar	ks)X	Drainage patterns		Other (ex. in Remarks)	1
		Drift lines present					
Remarks:	Meets the	hydrology criterion.		Remarks:	Does not me	et the hydrology criterion.	
		SOILS				SOILS	
Map Unit Name:	Hosmer sil	t loam, 2 to 6 % slopes		Map Unit Name:	Hosmer silt le	pam, 2 to 6 % slopes	
Profile Description:				Profile Description:			
DEPTH	MATRIX	MOTTLE	TEXTURE	DEPTH	MATRIX	MOTTLE	TEVTUDE
0-18"	10YR 5/2	10YR5/6				MOTTLE	TEXTURE
	1011(3/2	1011370	loam	0-12"	10YR 5/3	10YR5/4	loam
							
	HYDRIC	SOIL INDICATORS			HYDRIC S	OIL INDICATORS	
Histosol		Concretions		Histosol		Concretions	
Histic epipedon		Organic content		Histic epipedon		Organic content	
Sulfidic odor		Organic streaking		Sulfidic odor		Organic streaking	
Aquic moisture reg.		Local hydric soils lis	t	Aquic moisture reg.		Local hydric soils list	
Gleyed		National hydric soils		Gleyed	· 	National hydric soils lis	
Low Chroma	X	Other (ex. in Remar		Low Chroma		Other (ex. in Remarks)	
		_ Callet (ox. III (ottica)		LOW CITOTIA		Other (ex. in Remarks,	·
Remarks:	Meets the	hydric soil criterion.		Remarks:	Does not me	et the hydric soil criterion	
	WETLAN	D DETERMINATION			WETLAND	DETERMINATION	
Hydrophytic vegetati			No	Hydrophytic vegeta			(No
Wetland hydrology	•	X Yes	-No		_		K No
Hydric soils present		X Yes		Wetland hydrology	•		(No
Sampling point withi			—No	Hydric soils present	_		C No
camping point with	a welland?	<u></u>	No	Sampling point with	iin a wettand?_	^{res}	<u>₹</u> No
SKETCH:							

		,	AACI LAMD L	PELINEATION			
Feature ID:	Sec1-W05 (W0	03002)				Segment:	1
Project/Site:	I-69					Date:	6/22/2004
Client:	QK4						
	SMT, CND					County:	Vanderburgh
Investigator(s):						State:	IN
Aerial Sheet No.:	: <u>2</u>					Approx MP:	
						· · · · · -	
	WETL	AND				JPLAND	
Normal Circumstance	es? X Ye	S	No	Normal Circumstan	ces?	(Yes	No
Significantly Disturbe	ed? Ye:	s X	No	Significantly Disturb			No
Potential Problem A	rea? — Ye:	s X	No	Potential Problem A	_	- -	No
	-		-				
USACE Jurisdictions	al?Ye	s <u>X</u>	_No	USACE Jurisdiction	nal?	Yes >	(No
	VEGET	TION					
DOMINANT C	VEGETA					GETATION	-
DOMINANT SI	PECIES	STRATUM	INDICATOR	DOMINANT S	SPECIES	STRATUM	INDICATOR
Juncus tenuis		<u>Herb</u>	FAC	Ambrosia artemesii	folia	Herb	FACU
Lindemia dubia		Herb	OBL	Acer rubrum		Tree	FAC
Ambrosia artemesiif		Herb	FACU	Ambrosia trifida		Herb	FAC+
Polygonum pensylva	anicum	Herb	FACW+	Lonicera japonica		Vine	FACU
Eleocharis obtusa		Herb	OBL	Carya ovata		Tree	FACU
						1100	1700
Percent of Species (OBL, FACW, FAC (e	excl. FAC-)	80%	Percent of Species	OBL, FACW, F	AC (excl. FAC-)	40%
Remarks:	Moote the hydroni	autio vogototica esite			_		
Remarks.	weets the hydropi	nytic vegetation criter	rion.	Remarks:	Does not me	et the hydrophytic vegeta	tion criterion.
	HYDROI	LOGY			uv	DROLOGY	
Field Indicators:	Depth of Surface		None	Field Indicators			
ricia maicators.	Depth to Free Wa	_	>16"	Field Indicators:	Depth of Sur	_	None
	Depth to Saturate	_			Depth to Free		>16"
DDIMARY INDICAT	•		>16"		Depth to Sati	_	>16"
PRIMARY INDICAT		CONDARY INDICAT	ORS	PRIMARY INDICAT	rors	SECONDARY INDICA	TORS
Inundated		. root channels		Inundated		Ox. root channels	
Saturated <12"	Wa	ter-stained leaves		Saturated <12"		Water-stained leaves	
Water marks	Loc	cal soil survey data		Water marks		Local soil survey data	
Sediment deposit	FA	C- Neutral test	X	Sediment deposit		FAC- Neutral test	
Drainage patterns	X Oth	ner (ex. in Remarks)		Drainage patterns		Other (ex. in Remarks)	
Damades	Manta tha budasi-						
Remarks:	Meets the hydrolo	gy chterion.		Remarks:	Does not me	et the hydrology criterion.	
	SOIL	.s			<u></u>	SOILS	· · · · · · · · · · · · · · · · · · ·
Map Unit Name:	Iva silt loam, 0 to :	2 percent slopes		Map Unit Name:	lva silt loam.	0 to 2 percent slopes	
Profile Description:				Profile Description:			
DEPTH	MATRIX	MOTTLE	TEXTURE	DEPTH	MATRIX	MOTTLE	TEXTURE
0-16"	2.5Y 5/2 7.5Y	R 4/6 and 10YR 5/8	sil	0-16"	10YR 5/4	WOTTEL	sil
	HYDRIC SOIL	NDICATORS					
Histosol		ncretions		Llintanal	HYDRIC S	OIL INDICATORS	
Histic epipedon				Histosol		Concretions	
		ganic content		Histic epipedon		Organic content	
Sulfidic odor		anic streaking		Sulfidic odor		Organic streaking	
Aquic moisture reg.		al hydric soils list		Aquic moisture reg.		Local hydric soils list	
Gleyed		tional hydric soils list		Gleyed		National hydric soils lis	t
Low Chroma	XOth	ner (ex. in Remarks)		Low Chroma		Other (ex. in Remarks)	
Remarks:	Meets the hydric s	soil criterion.		Remarks:	Does not me	et the hydric soil criterion.	
	MET AND DE	FORMATION					
Liveranhutia vaastat	WETLAND DET		NI-			DETERMINATION	
Hydrophytic vegetati			_No	Hydrophytic vegeta	_	Yes _ <u>></u>	_ No
Wetland hydrology p			_No	Wetland hydrology	present?	Yes >	No
Hydric soils present?			_No	Hydric soils present	? -	Yes >	No
Sampling point within	n a wetland? X Yes	·	No	Sampling point with	in a wetland?		No
SKETCH:					_	_	

Feature ID:	Sect 10/0	7 (W03005)	***************************************	DELINEATION			
Project/Site:	I-69	/ (VV03003)				Segment:	1
	QK4					Date:	6/22/2004
Client:						County:	Vanderburgh
Investigator(s):	SMT, CN	<u> </u>				State:	IN
Aerial Sheet No.:	: <u>3 </u>					Approx MP:	
		WETLAND				UPLAND	
Normal Circumstance		X_Yes	No	Normal Circumstan	ces?	X_Yes	No
Significantly Disturb		Yes	<u>X</u> No	Significantly Disturb	ed?	Yes	X No
Potential Problem A	rea?	Yes	X No	Potential Problem A	\rea?	Yes	X No
USACE Jurisdictions	al?	Yes	X_No	USACE Jurisdiction	nal?	Yes	X_No
	VI	GETATION				05717101	-
DOMINANT S		STRATUM	INDICATOR	DOMINANT C		GETATION	
Echinochioa crusgai		Herb			PECIES	STRATUM	INDICATOR
Gratiola neglecta	"	Herb	FACW	Zea mays		Herb	UPL
	· · · · · ·		OBL		··		
Lindernia dubia		Herb	OBL				
		- 				-	-
Percent of Species (OBL, FACW,	FAC (excl. FAC-)	100%	Percent of Species	OBL, FACW, I	FAC (excl. FAC-)	0%
Remarks:	Meets the h	ydrophytic vegetation	criterion.	Remarks:	Does not me	et the hydrophytic vege	tation criterion.
	Н	DROLOGY			HY	DROLOGY	
Field Indicators:	Depth of Su	ırface Water:	None	Field Indicators:	Depth of Sur		None
	Depth to Fr		>16"		Depth to Fre		>16"
	•	iturated Soil:	0"	_	Depth to Sat		>16"
PRIMARY INDICAT	•	SECONDARY IND		PRIMARY INDICAT		SECONDARY INDIC	
Inundated		Ox. root channels	.0/110/10	Inundated	OKS	Ox. root channels	ATORS
Saturated <12"	x	Water-stained leav	es ————	Saturated <12"			
Water marks		Local soil survey da		Water marks		Water-stained leaves	
Sediment deposit		FAC- Neutral test		-		Local soil survey dat	a
Drainage patterns		Other (ex. in Rema	rke)	_ Sediment deposit		FAC- Neutral test	, ———
Drainage patterns		Other (ex. iii itellia		Drainage patterns		Other (ex. in Remark	(s)
Remarks:	Meets the h	ydrology criterion.		Remarks:	Does not me	et the hydrology criteric	n.
		SOILS				SOILS	
Map Unit Name:	Stendal silt	loam, frequently flood	ed	Map Unit Name:	Stendal silt k	oam, frequently flooded	
Profile Description:				Profile Description:			
DEPTH	MATRIX	MOTTLE	TEXTURE	DEPTH	MATRIX	MOTTLE	TEXTURE
0-8"	10YR 5/4		sil	0-16"	10YR 5/4		sil
8-16"	10YR 3/2	10YR 5/4	sicl				
	LIVERIO	OOU INDIONTOR					
	HYDRIC	SOIL INDICATORS			HYDRIC S	SOIL INDICATORS	
Histosol		Concretions		Histosol		Concretions	
Histic epipedon		Organic content		Histic epipedon		Organic content	
Sulfidic odor		Organic streaking		Sulfidic odor		Organic streaking	
Aquic moisture reg.		Local hydric soils li	st	 Aquic moisture reg. 		Local hydric soils list	
Gleyed		National hydric soil		Gleyed		National hydric soils	list
Low Chroma	X	Other (ex. in Rema	rks)	Low Chroma		Other (ex. in Remark	
Remarks:	Meets the h	ydric soil criterion.		Remarks:	Does not me	et the hydric soil criteric	on.
	WETLAND	DETERMINATION		 	WETI AND	DETERMINATION	
Hydrophytic vegetat			No	Hydrophytic vegeta		Yes	X No
Wetland hydrology p		X Yes	-No	Wetland hydrology			
Hydric soils present		X Yes				Yes	X No
Sampling point withi			—No	Hydric soils present		<u>. </u>	X No
Sampling point with	ii a welland?	<u>~</u> 169	No	Sampling point with	in a wetland?	Yes	X No
SKETCH:							

			****	LLINLAHON			
Feature ID:		8 (W03004)	_			Segment:	1
Project/Site:	1-69					Date:	6/22/2004
Client:	QK4					County:	Vanderburgh
Investigator(s):	SMT, CN	D				State:	IN
Aerial Sheet No.:							IIN
Actial Officer No	. <u>-</u>					Approx MP:	
		WETLAND				:	
Normal Circumstance		X Yes	NI.			UPLAND	
			- No	Normal Circumstan	-	<u>C</u> Yes	No
Significantly Disturbe Potential Problem A		— Yes	X No	Significantly Disturb		Yes	X_No
Potential Problem A	rear .	Yes	X_No	Potential Problem A	rea?	Yes	X_No
USACE Jurisdictions	ai?	X Yes	No	LICACE III.	-10	V	
OSACE Juliadiction	possibly a		No	USACE Jurisdiction	ai?	Yes	X_No
		GETATION				0==1==0	
DOMINANT SI		STRATUM	INDICATOR	DOMINANT C		GETATION	
Eleocharis obtusa	LOILO	Herb		DOMINANT S	PECIES	STRATUM	INDICATOR
Echinochloa crusgal	 	Herb	- OBL	Festuca pratensis		Herb	FACU-
Polygonum lapathifo		Herb	- FACW	Juncus tenuis		Herb	FAC
Ludwigia palustris	mani	Herb	- FACW+	Poa pratensis		Herb	FAC-
Luuwigia palusiris		rieib	OBL				
	······································						
 -		·			· 		
							
Percent of Species (OBL FACW I	FAC (eycl FAC)	100%	Doronat of Consider	001 540144 5	AC (FAC)	200/
Colocili or oposios	002, 17.011, 1	710 (0X0II. 1710)	10070	Percent of Species	OBL, FACVV, F	AC (excl. FAC-)	33%
Remarks:	Meets the h	ydrophytic vegetation cr	iterion	Remarks:	Door not mo	at tha budraabutia waxat	
/ Ciliani		y are propriet to gotto a control	iteriori.	itelliaiks.	Does not me	et the hydrophytic veget	tation criterion,
	ш\	/DROLOGY					
Field Indicators:		rface Water:	Na	E1-14 1 - P - 4		DROLOGY	
riela maicators.	Depth to Fr		None None	Field Indicators:	Depth of Sur		None
	•	turated Soil:	<u>>16"</u> >16"		Depth to Free		>16"
PRIMARY INDICAT	•	SECONDARY INDIC		DDIMARY INDIA.	Depth to Sati		>16"
	OKS		ATURS	PRIMARY INDICAT	ORS	SECONDARY INDIC	ATORS
Inundated		Ox. root channels		Inundated		Ox. root channels	
Saturated <12"		Water-stained leaves		Saturated <12"		Water-stained leaves	
Water marks		Local soil survey data	a	Water marks		Local soil survey data	<u> </u>
Sediment deposit	X	FAC- Neutral test	, 	Sediment deposit		FAC- Neutral test	
Drainage patterns		Other (ex. in Remark		Drainage patterns		Other (ex. in Remark	s)
Domorko	Maste the be	udealasu sitais	Algal mats		_		
Remarks:	weets the h	ydrology criterion.		Remarks:	Does not me	et the hydrology criterio	n.
		SOILS					
Map Unit Name:	Standal silt	loam, frequently flooded	Ī	M 11-2-11-	0	SOILS	
Profile Description:	Steridar Sitt	ioani, irequently nooded	<u> </u>	Map Unit Name:	Stendal sitt id	am, frequently flooded	····
DEPTH	MATRIX	MOTTLE	TEVTUDE	Profile Description:			
0-16"	10YR 5/2		TEXTURE	DEPTH	MATRIX	MOTTLE	TEXTURE
U-16	1011 3/2	7.5YR 4/6	sil	0-16"	10YR 5/3		sil
	HYDRIC	SOIL INDICATORS			LIVERIC	OIL INDIGATORS	
Histosol	TIT DICTO	Concretions		Histosol	HYDRIC S	OIL INDICATORS	
Histic epipedon		Organic content				Concretions	
Sulfidic odor		Organic streaking		Histic epipedon		Organic content	
Aquic moisture reg.		Local hydric soils list		Sulfidic odor		Organic streaking	
Gleyed		National hydric soils		Aquic moisture reg.		Local hydric soils list	
Low Chroma	X	Other (ex. in Remark		Gleyed		National hydric soils I	
LOW Chioina		Other (ex. iii Remaik	.s)	Low Chroma		Other (ex. in Remark	s)
Remarks:	Meets the h	ydric soil criterion.		Remarks:	Does not me	et the hydric soil criterio	n.
	METI AND	DETERMINATION					
Undranbutie maestet		DETERMINATION	N.			DETERMINATION	
Hydrophytic vegetat			-No	Hydrophytic vegeta		Yes	X No
Wetland hydrology p		X Yes	-No	Wetland hydrology	_	Yes	X_No
Hydric soils present		X Yes	-No	Hydric soils present	_	Yes	X No
Sampling point withi	ıı a wetiand?	<u>^</u> res	No	Sampling point with	in a wetland?_	Yes	X No
SKETCH:							

			WE LEAND E	CLINEATION			
Feature ID:		10 (W03008)				Segment:	1
Project/Site:	1-69					Date:	6/23/2004
Client:	QK4					County:	Vanderburgh
Investigator(s):	SMT, C	ND					
Aerial Sheet No.						State:	IN
Aenai Sheet No.	· -					Approx MP:	
		METLAND					
Named Circumstan		WETLAND				UPLAND	
Normal Circumstand		X Yes	No	Normal Circumstan		X_Yes	No
Significantly Disturb		Yes	X No	Significantly Disturt	-	Yes	X No
Potential Problem A	rea?	Yes	<u>X</u> No	Potential Problem /	Area?	Yes	X_No
USACE Jurisdictions	al?	X Yes	No	HOAGE Industrial	- 10		
GO/ (GE Ballbalotion)	-1 .	adjacent	^{No}	USACE Jurisdiction	nai?	Yes .	X_No
		VEGETATION	·· <u>·····</u> ·· <u>·</u> ······		\		·
DOMINANT S		STRATUM	INDICATOR	DOMINANT 6		GETATION	
Scirpus atrovirens		Herb		DOMINANT S	PECIES	STRATUM	INDICATOR
Phalaris arundinace		Herb	OBL	Festuca pratensis		Herb	FACU-
Rumex crispus	<u> </u>	Herb	FACW+	Trifolium repens		Herb	FACU+
Carex vulpinoidea		Herb	FAC+	Plantago major		Herb	FAC+
Carex vulpinoidea		neib	OBL				
							
							
Percent of Species	OBL, FACW	, FAC (excl. FAC-)	100%	Percent of Species	OBL, FACW, I	FAC (excl. FAC-)	33%
Remarks:	Meets the	hydrophytic vegetation	n criterion.	Remarks:	Does not me	et the hydrophytic veget	ation criterion.
						, , , ,	
		HYDROLOGY			HY	DROLOGY	
Field Indicators:	Depth of	Surface Water:	None	Field Indicators:	Depth of Sur	face Water:	None
	Depth to	Free Water:	>16"		Depth to Fre		>16"
	Depth to	Saturated Soil:	0"		Depth to Sat		>16"
PRIMARY INDICAT	ORS	SECONDARY IN	DICATORS	PRIMARY INDICAT	rors	SECONDARY INDICA	
Inundated		 Ox. root channels 	i	Inundated		Ox. root channels	
Saturated <12"	X	Water-stained lea	ves	Saturated <12"		Water-stained leaves	
Water marks		Local soil survey	data	Water marks		Local soil survey data	
Sediment deposit		FAC- Neutral test	X	Sediment deposit		FAC- Neutral test	
Drainage patterns		Other (ex. in Rem	arks)	Drainage patterns		Other (ex. in Remarks	s)
Remarks:	Maata thu	. horden la escapita de la				·	
Remarks.	wieets tite	hydrology criterion.		Remarks:	Does not me	et the hydrology criterion	1.
		SOILS				SOILS	
Map Unit Name:	Taftown s	ilt loam, 12 to 18 perce	nt slopes, severely ero	Map Unit Name:	Taftown silt I	oam, 12 to 18 percent sk	opes, severely erox
Profile Description:				Profile Description:			
DEPTH	MATRIX		TEXTURE	DEPTH	MATRIX	MOTTLE	TEXTURE
0-4"	2.5Y 4/2	7.5YR 4/4	sicl	0-3"	2.5Y 4/3	7.5YR 4/4	sicl
							
	HYDRIC	SOIL INDICATORS			UVDDIO (2011 11:510 1-550	
Histosol	,,,,,,,,,,,	Concretions		11:-41	HYDRIC S	SOIL INDICATORS	
Histic epipedon		Organic content		Histosol		Concretions	
Sulfidic odor		Organic streaking		Histic epipedon		Organic content	
Aquic moisture reg.		Local hydric soils		Sulfidic odor		Organic streaking	
Gleyed				Aquic moisture reg.		Local hydric soils list	
Low Chroma		_ National hydric so		Gleyed		National hydric soils li	
Low Chioma	X	Other (ex. in Rem		Low Chroma		Other (ex. in Remarks	s)
Remarks:	Meets the	hydric soil criterion. C	ouldn't dig below 4"-	Remarks;	Does not me	et the hydric soil criterior	1
						below 3"- clay	
	WETLA	D DETERMINATION				DETERMINATION	
Hydrophytic vegetat	ion present?	X Yes	_ No	Hydrophytic vegeta			X No
Wetland hydrology p		X Yes	No	Wetland hydrology			X No
Hydric soils present		XYes	No	Hydric soils present	-		X No
Sampling point withi	n a wetland	? X Yes	No	Sampling point with		 .	X No
				, 9,		_	
SKETCH:							

Feature ID: Project/Site: Client: Investigator(s): Aerial Sheet No.:	I-69 QK4 SMT, AB	7 (W03013)				Segment: Date: County: State: Approx MP:	1 7/14/2004 Vanderburgh IN
						Approx IVII .	
Normal Circumstance Significantly Disturbe Potential Problem Ar USACE Jurisdictiona	es? ed? ea?	WETLAND X Yes Yes Yes Yes X Yes	No X No X No No	Normal Circumstand Significantly Disturb Potential Problem A USACE Jurisdiction	ces? ed? .rea?	Yes .	No X No X No X No
							<u>× 110</u>
DOMINANT SF Echinochloa crusgall Polygonum lapathifo Polygonum persicari Ambrosia artemesiifo Eleocharis obtusa	PECIES li lium a	STRATUM Herb Herb Herb Herb Herb	INDICATOR FACW FACW+ FACW FACU OBL	DOMINANT S Zea mays		GETATION STRATUM Herb	INDICATOR UPL
Percent of Species C		,	80%	Percent of Species	OBL, FACW, I	FAC (excl. FAC-)	0%
Remarks:	Meets the h	ydrophytic vegetation crit	erion.	Remarks:	Does not me	eet the hydrophytic veget	ation criterion.
	H	/DROLOGY			н	/DROLOGY	·
Field Indicators:	Depth of Su Depth to Fro	rface Water:	2" Surface Surface	Field Indicators:	Depth of Sur Depth to Fre Depth to Sat	face Water: e Water:	None >16" Surface
PRIMARY INDICATO Inundated Saturated <12" Water marks Sediment deposit Drainage patterns	X X X X	SECONDARY INDICA Ox. root channels Water-stained leaves Local soil survey data FAC- Neutral test Other (ex. in Remarks	X	PRIMARY INDICAT Inundated Saturated <12" Water marks Sediment deposit Drainage pattems	ORS	SECONDARY INDICA Ox. root channels Water-stained leaves Local soil survey data FAC- Neutral test Other (ex. in Remarks	
Remarks:	Meets the h	ydrology criterion.		Remarks:	Saturation fro	om previous night rain or	nly, does not meet
		SOILS			Cinerion	SOILS	
Map Unit Name: Profile Description:	Steff silt loa	m, frequently flooded	·	Map Unit Name:	Steff silt loar	n, frequently flooded	
DEPTH 0-3" 3-16"	MATRIX 2.5Y 5/4 2.5Y 6/2	7.5YR 5/8 N2.5/	TEXTURE sicl sicl concret.	Profile Description: DEPTH 0-16"	MATRIX 2.5Y 5/4	MOTTLE	TEXTURE sicl
Histosol Histic epipedon Sulfidic odor Aquic moisture reg. Gleyed Low Chroma	HYDRIC	SOIL INDICATORS Concretions Organic content Organic streaking Local hydric soils list National hydric soils li Other (ex. in Remarks	X	Histosol Histic epipedon Sulfidic odor Aquic moisture reg. Gleyed Low Chroma	HYDRIC	SOIL INDICATORS Concretions Organic content Organic streaking Local hydric soils list National hydric soils li Other (ex. in Remarks	
Remarks:	Meets the h	ydric soil criterion.		Remarks:	Does not me	eet the hydric soil criterior	1.
Hydrophytic vegetati Wetland hydrology p Hydric soils present? Sampling point withir	on present? resent?	X Yes X Yes	No No No No	Hydrophytic vegetar Wetland hydrology Hydric soils present Sampling point with	tion present? present? :?	X Yes Yes	X_No No X_No X_No

SKETCH:

			WEILKIND	JELINEA HON			
Feature ID:		18 (W03014)				Segment:	1
Project/Site:	I-69		-			Date:	7/14/2004
Client:	QK4					County:	
Investigator(s):	SMT, AB	·		 			Vanderburgh
• , ,		<u> </u>				State:	<u>IN</u>
Aerial Sheet No.	: _16					Approx MP:	
	_	WETLAND				UPLAND	
Normal Circumstand		X Yes	No	Normal Circumstar	ices?	X Yes	No
Significantly Disturb		Yes	X No	Significantly Distur		- .	X No
Potential Problem A	rea?	Yes	X No	Potential Problem	Area?		X No
			_ _		-		
USACE Jurisdictions	al?	X_Yes	No	USACE Jurisdiction	nal?	Yes	X_No
		EGETATION					
DOMINANT S		STRATUM	010104505	==		GETATION	.*
			INDICATOR	_ DOMINANT S	SPECIES	STRATUM	INDICATOR
Echinochloa crusga	<u> </u>	Herb	FACW	Zea mays		Herb	UPL
							-
							
Percent of Species (OBL FACW	FAC (eycl FAC-)	1000/	D	001 -1011		
Ciccin or openies	ODE, 17.044,	1710 (exol. 170-)	100%	Percent of Species	OBL, FACW, F	FAC (excl. FAC-)	0%
Remarks:	Meets the	hydrophytic vegetation cri	terion.	Remarks;	Does not me	et the hydrophytic vegeta	tion criterion
		. ,		romano,	Docs not me	et tile hydrophytic vegeta	adon Citterion,
	Н	YDROLOGY				70001 0001	
Field Indicators:		urface Water:	1"	Ciald ladia da		DROLOGY	
Tiola maloatoro.	Depth to F		Surface	Field Indicators:	Depth of Sur	_	None
	•	aturated Soil:			Depth to Fre		>16"
PRIMARY INDICAT			Surface		Depth to Sat	_	>16"
		SECONDARY INDICA	ATORS	PRIMARY INDICAT	rors	SECONDARY INDICA	TORS
Inundated	X	Ox. root channels		Inundated		Ox. root channels	
Saturated <12"	X	Water-stained leaves		Saturated <12"		Water-stained leaves	
Water marks		Local soil survey data		Water marks		Local soil survey data	
Sediment deposit	X	FAC- Neutral test		Sediment deposit		FAC- Neutral test	
Drainage patterns	X	Other (ex. in Remarks	3)	Drainage patterns		Other (ex. in Remarks	, ——
_						,	,
Remarks:	Meets the I	hydrology criterion.		Remarks:	Does not me	et the hydrology criterion	
		SOILS				SOILS	
Map Unit Name:	Stendal silt	loam, frequently flooded		Map Unit Name:	Ctondal ailt le		
Profile Description:		in a quality in a		•	Stendar sitt id	pam, frequently flooded	
DEPTH	MATRIX	MOTTLE	TEVTUDE	Profile Description:			
0-3"	2.5Y 5/4	WOTTE	TEXTURE	DEPTH	MATRIX	MOTTLE	TEXTURE
3-16"	2.5Y 6/2	7 EVD 5/0	sicl	0-16"	2.5Y 5/4		sicl
3-10	2.51 0/2	7.5YR 5/8 N2.5/	sicl	· · · · · · · · · · · · · · · · · · ·			
	HADBIC	SOIL INDICATORS	concret.				
Historal	HIDRIC	_			HYDRIC S	OIL INDICATORS	
Histosol		Concretions	X	Histosol		Concretions	
Histic epipedon		Organic content		Histic epipedon		Organic content	
Sulfidic odor		Organic streaking		Sulfidic odor		Organic streaking	
Aquic moisture reg.		Local hydric soils list		Aquic moisture reg.		Local hydric soils list	
Gleyed		National hydric soils ii	st	Gleyed		National hydric soils lis	st
Low Chroma	X	Other (ex. in Remarks)	Low Chroma		Other (ex. in Remarks	
Remarks:	Moote the l	audria apil aritaria.				•	
Acmaiks.	MICCIS LITE	nydric soil criterion.		Remarks:	Does not me	et the hydric soil criterion	
	WETLAN	DETERMINATION			WETLAND	DETERMINATION	
Hydrophytic vegetati			No	Hydronbytic veceto			. N.
Wetland hydrology p	•	X Yes	— No	Hydrophytic vegeta			<u>K</u> No
Hydric soils present?		X Yes		Wetland hydrology	· _		K_No
Sampling point within			No	Hydric soils present			K No
Camping Point Within	. a wonanu!	<u></u> (63	No	Sampling point with	in a wettand?_	Yes	<u>K</u> No
SKETCH:							

			MEILAND	PELINEATION			
Feature ID:	Sec1-W19	9 (W03015)	_			Segment:	1
Project/Site:	I-69		_			Date:	7/20/2004
Client:	QK4					County:	Gibson
Investigator(s):	Sarah Tof	ari, Christi Darcy				•	
Aerial Sheet No.:		and ourion parel				_ State:	IN
Achai Sheet No	. <u>10a</u>	_				Approx MP:	
		VETLAND					
Normal Circumstance		X Yes	No			UPLAND	
Significantly Disturbe	-	Yes	X No	Normal Circumstan		X Yes	No
Potential Problem A	_	Yes	X No	Significantly Disturb		Yes	X_No
1 Oterrial Toblem 7		103	<u>~</u> NO	Potential Problem A	\rea?	Yes	X_No
USACE Jurisdictions	al?	Yes	X No	USACE Jurisdiction	-12	V	v
	_	_ ` · · ·	<u> </u>	OOACE Julisdiction	iai ?	Yes	X_No
	VE	GETATION			V	EGETATION	
DOMINANT SI	PECIES	STRATUM	INDICATOR	DOMINANT S		STRATUM	INDICATOR
Echinochloa crusgal	lli .	Herb	FACW	Zea mays	. 10.10	Herb	UPL
Eleocharis obtusa		Herb	OBL.			Tielb	UFL
Polygonum pensylva	anicum	Herb	FACW+				· · · · · · · · · · · · · · · · · · ·
Polygonum lapathifo	lium	Herb	FACW+				
						·	
D	201 54014/5						
Percent of Species (JBL, FACW, F	AC (excl. FAC-)	100%	Percent of Species	OBL, FACW,	FAC (excl. FAC-)	0%
Remarks:	Moste the h	ydrophytic vegetation c	ai A =				
ixemarks.	Wieets the m	volophytic vegetation c	iterion.	Remarks:	Does not m	eet the hydrophytic veget	ation criterion.
	UV	DROLOGY					
Field Indicators:	Depth of Sur		N	F: 111 // /		YDROLOGY	
ricia maicators.	Depth to Fre		None >16"	Field Indicators:	•	ırface Water:	None
	Depth to Sat		12"		Depth to Fr		>16"
PRIMARY INDICATE		SECONDARY INDIC		DOMADY INDICAT		aturated Soil:	>16"
Inundated	0110	Ox. root channels	ATORS	PRIMARY INDICAT	UK5	SECONDARY INDIC.	ATORS
Saturated <12"	x	Water-stained leaves	, ———	Inundated		Ox. root channels	
Water marks		Local soil survey dat		Saturated <12" Water marks		Water-stained leaves	
Sediment deposit		FAC- Neutral test	* 	Sediment deposit		_ Local soil survey data	
Drainage patterns		Other (ex. in Remark	·s)	Drainage patterns		FAC- Neutral test	., ———
• .		,	/	Diamage patterns		Other (ex. in Remarks	·)
Remarks:	Meets the hy	drology criterion.		Remarks:	Does not m	eet the hydrology criterior	1
						and the state of t	
		SOILS				SOILS	
Map Unit Name:	Hosmer silt l	oam, 6 to 12 percent sl	opes	Map Unit Name:	Hosmer silt	loam, 6 to 12 percent slo	pes
Profile Description:				Profile Description:			
DEPTH	MATRIX	MOTTLE	TEXTURE	DEPTH	MATRIX	MOTTLE	TEXTURE
0-6"	10YR 4/4		silt loam	0-16"	10YR 4/4		silt loam
6-16"	2.5Y 5/2	7.5YR 5/8	silt loam				
	HYDRIC	OIL INDICATORS					
Histosol	III DINIC G	Concretions		1 8 - 4 1	HYDRIC	SOIL INDICATORS	
Histic epipedon		Organic content		Histosol		Concretions	
Sulfidic odor		Organic streaking		Histic epipedon		Organic content	
Aquic moisture reg.		Local hydric soils list		Sulfidic odor		Organic streaking	
Gleyed	·	National hydric soils		Aquic moisture reg.		Local hydric soils list	·
Low Chroma		Other (ex. in Remark		Gleyed		National hydric soils li	
2011 Gilloma		Other (ex. III Nemair		Low Chroma		Other (ex. in Remarks	s)
Remarks:	Meets the hy	dric soil criterion.		Remarks:	Does not m	eet the hydric soil criterion	١.
	WETLAND	DETERMINATION			1444		
Hydrophytic vegetati			No	Livelennia de la composición dela composición de la composición de la composición dela composición dela composición dela composición de la composición dela composición		D DETERMINATION	v. 11
Wetland hydrology p		Yes	-No	Hydrophytic vegetat			X_No
Hydric soils present?	_	Yes	-No	Wetland hydrology		—Yes	X_No
Sampling point within			-No	Hydric soils present		_	X No
			—'**	Sampling point with	ııı a wetiand?	— Yes	X_No
SKETCH:							

Feature ID: Project/Site: Client: Investigator(s): Aerial Sheet No.:	I-69 QK4 Sarah T	(24 (W03018A)	/			Segment: Date: County: State: Approx MP:	1 7/20/2004 Gibson IN
		WETLAND	" - ' " 	<u></u>		UPLAND	
Normal Circumstanc Significantly Disturbe Potential Problem Al	ed?	X Yes Yes Yes	No X No X No	Normal Circumstan Significantly Disturb Potential Problem A	ped?	X Yes Yes Yes	No X No X No
USACE Jurisdictions	ai?	X Yes	No	USACE Jurisdiction	nal?	Yes	X_No
	,	VEGETATION				VEGETATION	
DOMINANT SI Phalaris arundinacea		STRATUM Herb	INDICATOR FACW+	DOMINANT S Lespedeza sp.		STRATUM	INDICATOR
Impatiens capensis		Herb	FACW	Rubus pensylvanic	a	Herb Vine	FACU FACU
Salix nigra		Tree	OBL	Solidago altissima		Herb	FACU
Pilea pumila		Herb	FACW	Phytolacca america	ana	Herb	FAC-
Ludwigia alternifolia		Herb	OBL				
Percent of Species 0	DBL, FACW	/, FAC (excl. FAC-)	100%	Percent of Species	OBL, FACV	V, FAC (excl. FAC-)	0%
Remarks:	Meets the	hydrophytic vegetation	on criterion.	Remarks:	Does not	meet the hydrophytic vege	etation criterion.
		HYDROLOGY			 -	HYDROLOGY	·
Field Indicators:		Surface Water:	2" - 36"	Field Indicators:		Surface Water:	None
	•	Free Water:	surface to 12"	r loid iridiadicis.		Free Water:	>16"
	Depth to	Saturated Soil:	surface			Saturated Soil:	>16"
PRIMARY INDICATO	ORS	SECONDARY IN		PRIMARY INDICAT		SECONDARY INDIC	
Inundated	Х	Ox. root channel		Inundated		Ox. root channels	BATONS
Saturated <12"	X	Water-stained le	aves	Saturated <12"		Water-stained leaves	· ———
Water marks		Local soil survey	data	Water marks		Local soil survey dat	
Sediment deposit		FAC- Neutral tes	st ————	Sediment deposit		FAC- Neutral test	
Drainage patterns	X	Other (ex. in Rer	marks)	Drainage patterns		Other (ex. in Remark	(s)
Remarks:	Meets the	hydrology criterion.		Remarks:	Does not	meet the hydrology criteric	
	·	SOILS				SOILS	
Map Unit Name: Profile Description:	Hosmer s	ilt loam, 6 to 12 perce	nt slopes, severely erode	Map Unit Name: Profile Description:		ilt loam, 6 to 12 percent slo	opes, severely erode
DEPTH 0-16"	MATRIX 10YR 5/2		TEXTURE (R 5/6 silty clay loam	DEPTH 0-16"	MATRIX 10YR 5/4		TEXTURE silt loam
Histosol	HYDRIC	SOIL INDICATORS		Histosol	HYDRIC	C SOIL INDICATORS Concretions	
Histic epipedon		Organic content		Histic epipedon		Organic content	
Sulfidic odor		Organic streakin	g	Sulfidic odor		Organic streaking	
Aquic moisture reg.		Local hydric soils		Aquic moisture reg.		Local hydric soils list	
Gleyed		National hydric s	oils list	Gleved		National hydric soils	
Low Chroma	Х	Other (ex. in Rer	marks)	Low Chroma		Other (ex. in Remark	
Remarks:	Meets the	hydric soil criterion.		Remarks:	Does not	meet the hydric soil criterio	·
	WETLA	ND DETERMINATION			WETLA	ND DETERMINATION	
Hydrophytic vegetati			No	Hydrophytic vegeta			Y No
Wetland hydrology p	•	X Yes	-No	Wetland hydrology		Yes	X No X No
Hydric soils present?		X Yes	— No	Hydric soils present		— Yes	
Sampling point within		_	—No	Sampling point with			X No X No
SKETCH:		_ _	_			<u> </u>	<u></u> •

			WEILANDD	ELINEATION			
Feature ID:	Sec1-W2	6 (W03018F)				Segment:	1
Project/Site:	I-69					Date:	7/20/2004
Client:	QK4					County:	Gibson
Investigator(s):	Sarah To	fari, Christi Darcy	······································	· · · · · · · · · · · · · · · · · · ·		•	
• , ,		idit, Offisti Balcy				State:	IN
Aerial Sheet No.:	10a					Approx MP:	
		WETLAND				: 	
N1 Ci						UPLAND	
Normal Circumstance		X Yes	— No	Normal Circumstan		X_Yes	No
Significantly Disturbe		—Yes	X No	Significantly Disturt		Yes	X_No
Potential Problem Ar	ea?	— ^{Yes}	<u>X</u> No	Potential Problem A	\rea?	Yes	X No
USACE Jurisdictiona	1?	X_Yes	No	USACE Jurisdiction	nal?	Yes	X_No
		EGETATION					
DOMINANT SF		STRATUM	INDICATOR	DOMINANT C		GETATION	· · · · · · · · · · · · · · · · · · ·
Acer saccharinum	LOILO	•	INDICATOR	DOMINANT S	PECIES	STRATUM	INDICATOR
Salix nigra		Tree	FACW	Lespedeza sp.		Herb	_ FACU
		Tree	OBL	Rubus pensylvanic	a	Vine	_ FACU
Boehmeria cylindrica		Herb	OBL	Solidago altissima		Herb	FACU
Phalaris arundinacea		Herb	FACW+	Phytolacca america	ina	Herb	FAC
Solidago canadensis		Herb	FACU				
Percent of Species C	BL, FACW,	FAC (excl. FAC-)	80%	Percent of Species	OBL, FACW,	FAC (excl. FAC-)	0%
Remarks:	Meets the l	hydrophytic vegetation	criterion.	Remarks:	Does not me	et the hydrophytic vege	etation criterion.
***************************************		YDROLOGY					
Field Indicators:		urface Water:	Na.	F: (1) (1)		DROLOGY	
rield indicators.	•		None	Field Indicators:	Depth of Sui		None
	Depth to Fi	aturated Soil:	>16"		Depth to Fre		>16"
DDIMARY INDICATO			>16"		Depth to Sat		>16"
PRIMARY INDICATO	סאכ	SECONDARY INDI	CATORS	PRIMARY INDICAT	rors	SECONDARY INDIC	CATORS
Inundated		Ox. root channels		Inundated		Ox. root channels	
Saturated <12"		. Water-stained leave		Saturated <12"		Water-stained leave	
Water marks		Local soil survey da		Water marks		Local soil survey dat	ta
Sediment deposit		FAC- Neutral test	X	Sediment deposit		FAC- Neutral test	
Drainage patterns	X	Other (ex. in Rema	rks)	Drainage patterns		Other (ex. in Remarl	ks)
Remarks:	Meets the I	hydrology criterion.		Remarks:	Does not me	et the hydrology criterio	on.
		SOILS				SOILS	
Map Unit Name:	Hosmer silt	loam, 6 to 12 percent	slope, severely erode	Map Unit Name:	Hosmer silt I	oam, 6 to 12 percent sl	ope, severely erode
Profile Description:				Profile Description:			
DEPTH	MATRIX	MOTTLE	TEXTURE	DEPTH	MATRIX	MOTTLE	TEXTURE
0-16"	10YR 5/2	10YR 4/6 and 10YR	5/6 silty clay loam	0-16"	10YR 5/4		silt loam
	HYDRIC	SOIL INDICATORS			HYDDIC	SOIL INDICATORS	-
Histosol		Concretions		Histosol	TIDRIC .	Concretions	
Histic epipedon		Organic content		Histic epipedon		Organic content	
Sulfidic odor		Organic streaking		Sulfidic odor		•	
Aquic moisture reg.		Local hydric soils lis	st	Aquic moisture reg.		Organic streaking	
Gleyed		National hydric soil:		Gleved		Local hydric soils lis National hydric soils	
Low Chroma	X	Other (ex. in Rema		Low Chroma		Other (ex. in Remark	
Remarks:		hydric soil criterion.			<u> </u>		
Comarks,	.viccia uie i			Remarks:	Does not me	et the hydric soil criteri	on.
	WETLAN	D DETERMINATION			WETLAND	DETERMINATION	
Hydrophytic vegetation			No	Hydrophytic vegeta		Yes	X No
Wetland hydrology p		X Yes	No	Wetland hydrology		Yes	X No
Hydric soils present?		X Yes	No	Hydric soils presen	•	Yes	X No
Sampling point within	n a wetland?	X Yes	No	Sampling point with	iin a wetland?	Yes	X No
SKETCH:					•		_ _

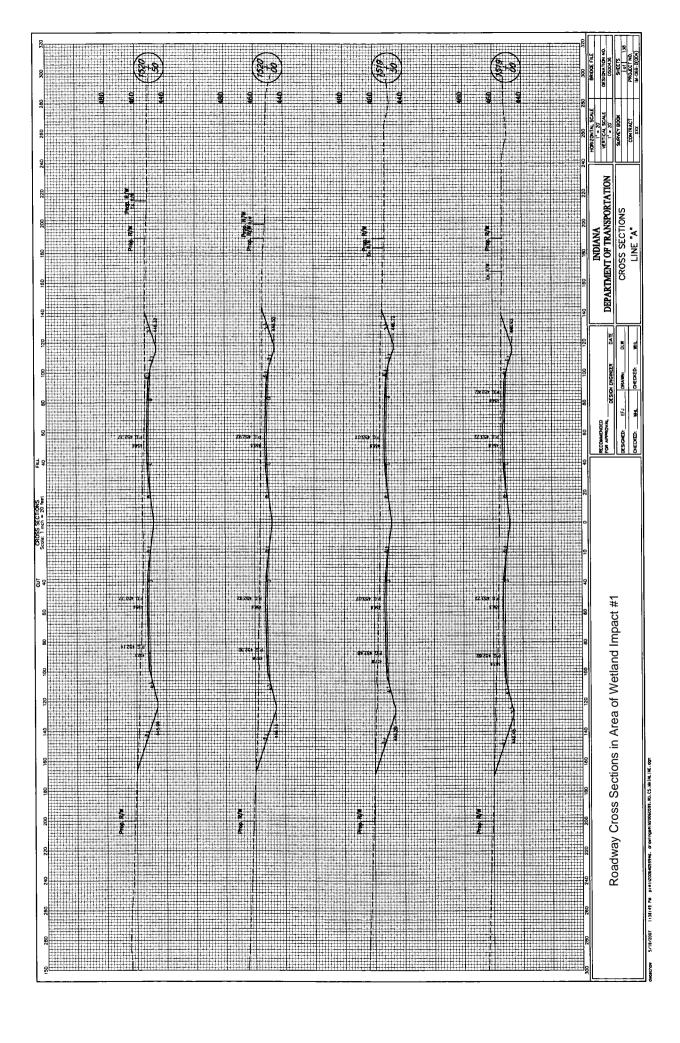
			WE I LAND D	ELINEATION			
Feature ID:		28 (W03018A)				Segment:	1_
Project/Site:	1-69					Date:	7/20/2004
Client:	QK4					County:	Gibson
Investigator(s):		ofari, Christi Darcy		-		State:	IN
Aerial Sheet No.	: <u>18a</u>					Approx MP:	
- <u></u>							
Normal Circumstand		WETLAND				UPLAND	-
Significantly Disturb		X Yes	_No	Normal Circumstan	_	X_Yes	No
Potential Problem A		<u> </u>	X_No	Significantly Disturt		Yes	X No
Potential Problem A	ica?	Yes	<u>X</u> No	Potential Problem A	Area?	Yes	X No
USACE Jurisdictions	ai?	X Yes	No	USACE Jurisdiction	nal?	Yes	X_No
	V	EGETATION			VE	GETATION	
DOMINANT SI		STRATUM	INDICATOR	DOMINANT S		STRATUM	INDICATOR
Phalaris arundinace	а	Herb	FACW+	Lespedeza sp.		Herb	FACU
Impatiens capensis		Herb	FACW	Rubus pensylvanic	a	Vine	FACU
Salix nigra		Tree	OBL	Solidago altissima		Herb	FACU
Pilea pumila		Herb	FACW	Phytolacca america	ina	Herb	
Ludwigia peploides		Herb	OBL	. Hytoladda amened			FAC-
							
Demant of Species (OBL EACIN	FAC (avel FAC)					-
Percent of Species (JBL, FACVV,	FAC (excl. FAC-)	100%	Percent of Species	OBL, FACW, F	FAC (excl. FAC-)	0%
Remarks:	Meets the	hydrophytic vegetation crite	erion.	Remarks:	Does not me	et the hydrophytic vege	etation criterion.
	Н	YDROLOGY			ш	DROLOGY	
Field Indicators:	Depth of S	urface Water:	2" - 36"	Field Indicators:	Depth of Sur		N
	Depth to F		surface to 12"	ricia maicators.			None
		aturated Soil:	surface		Depth to Fre		>16"
PRIMARY INDICATO		SECONDARY INDICA		DRIMARY INDICAT	Depth to Sat		>16"
Inundated	X	Ox. root channels	IONS	PRIMARY INDICAT	ORS	SECONDARY INDIC	CATORS
Saturated <12"	X	Water-stained leaves		Inundated		Ox. root channels	<u> </u>
Water marks		Local soil survey data		Saturated <12"		Water-stained leave:	
		-		Water marks		Local soil survey dat	a
Sediment deposit		FAC- Neutral test		Sediment deposit		FAC- Neutral test	
Drainage patterns	<u>X</u>	Other (ex. in Remarks)		Drainage patterns	· · · · · · · · · · · · · · · · · · ·	Other (ex. in Remark	(s)
Remarks:	Meets the	hydrology criterion.		Remarks:	Does not me	et the hydrology criterio	on.
	 	SOILS				SOILS	
Map Unit Name:	Hosmer silt	t loam, 6 to 12 percent slop	e, severely erode	Map Unit Name:	Hosmer silt lo	pam, 6 to 12 percent slo	ope, severely erode
Profile Description:				Profile Description:			- <u> </u>
DEPTH	MATRIX	MOTTLE	TEXTURE	DEPTH	MATRIX	MOTTLE	TEXTURE
0-16"	10YR 5/2	10YR 4/6 and 10YR 5/6	silty clay loam	0-16"	10YR 5/4		silt loam
						_	-
	HYDRIC	SOIL INDICATORS			HYDRIC 5	OIL INDICATORS	
Histosol		Concretions		Histosol		Concretions	
Histic epipedon		Organic content		Histic epipedon		Organic content	····
Sulfidic odor	`	Organic streaking		Sulfidic odor		Organic streaking	
Aquic moisture reg.		Local hydric soils list		Aquic moisture reg.		Local hydric soils list	
Gleyed		National hydric soils list		Gleyed			
Low Chroma	Х	Other (ex. in Remarks)		Low Chroma		National hydric soils Other (ex. in Remark	
	Meets the h	nydric soil criterion.		Remarks:	Does not me	et the hydric soil criterio	,
Remarks:							
Remarks:	WETLAND	DETERMINATION					
		D DETERMINATION X Yes	No	Hydrophytic		DETERMINATION	V N
Hydrophytic vegetati	on present?	X_Yes	_No	Hydrophytic vegetal	tion present?	Yes	X No
Hydrophytic vegetati Wetland hydrology p	on present? resent?	X Yes –	No	Wetland hydrology	tion present? _ present? _	Yes Yes	X No
Remarks: Hydrophytic vegetati Wetland hydrology p Hydric soils present? Sampling point withir	on present? resent?	X Yes	_		tion present? _ present? _ ?	Yes	

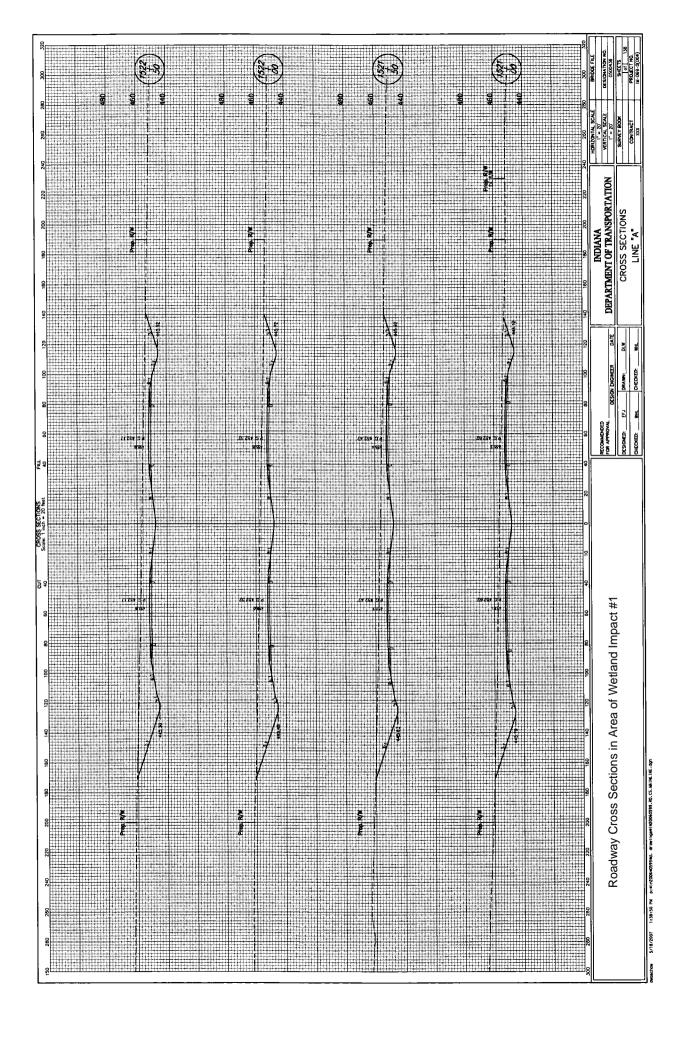
SKETCH:

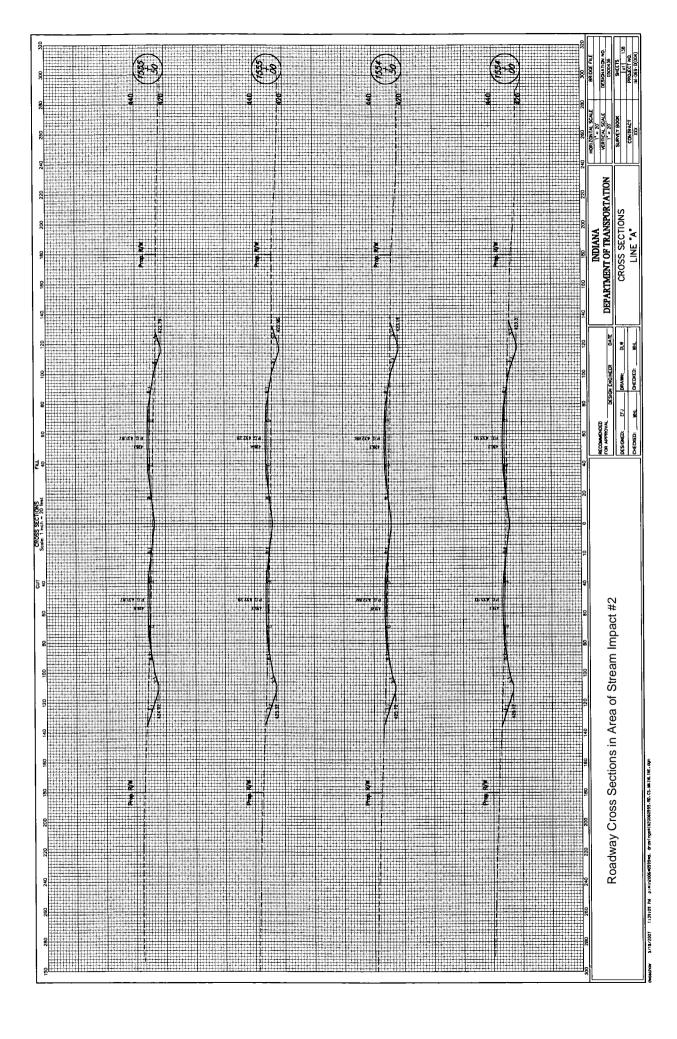
Feature ID:	Sec1-W31 (W03018A)					Segment:	1	
Project/Site:	1-69 QK4					Date:	7/20/2004	
Client:			County:		Gibson			
Investigator(s): Sarah Tofari, Christi Darcy				Sta		State:	IN	
Aerial Sheet No.:	<u>18a</u>			Approx MP:				
		WETLAND				JPLAND		
	 -		No No	Normal Circumstances?		Yes	No	
Significantly Disturbed? Yes X N Potential Problem Area? Yes X N			X No	Significantly Disturbed?		_Yes	X No	
		X No	Potential Problem A	rea?	Yes	X_No		
USACE Jurisdictional?		X_Yes	No	USACE Jurisdictional?		_Yes	X_No	
	V	EGETATION			VE	GETATION	·	
DOMINANT SPECIES		STRATUM INDICATOR		DOMINANT SPECIES		STRATUM	INDICATOR	
Phalaris arundinacea		Herb FACW+		Lespedeza sp.		Herb	FACU	
Impatiens capensis		Herb FACW		Rubus pensylvanica		Vine	FACU	
Salix nigra		Tree	OBL	Solidago altissima		Herb	FACU	
Pilea pumila		Herb			Phytolacca americana		FAC-	
Ludwigia peploides		Herb	OBL					
								
							-	
Percent of Species OBL, FACW, FAC (excl. FAC-) 100%				Percent of Species OBL, FACW, FAC (excl. FAC-) 0%				
Remarks:	Meets the	hydrophytic vegetation cr	iterion.	Remarks:	Does not mee	et the hydrophytic veget	ation criterion.	
	Н	YDROLOGY			HY	DROLOGY		
Field Indicators:	Depth of S	urface Water:	2" - 36"	Field Indicators:	Depth of Surf		None	
		ree Water: surface to 12"		Depth to Free			>16"	
	Depth to S	aturated Soil:	surface		Depth to Satu	ırated Soil:	>16"	
PRIMARY INDICAT	ORS	SECONDARY INDIC	ATORS	PRIMARY INDICAT	ORS	SECONDARY INDIC	ATORS	
Inundated	X	Ox. root channels		Inundated		Ox. root channels		
Saturated <12"	Х	_ Water-stained leaves		Saturated <12"		Water-stained leaves		
Water marks		Local soil survey data	a	Water marks		Local soil survey data	1	
Sediment deposit		FAC- Neutral test		Sediment deposit		FAC- Neutral test		
Drainage patterns	X	Other (ex. in Remark	s)	Drainage patterns		Other (ex. in Remark	s)	
Remarks:	Meets the	hydrology criterion.		Remarks:	Does not mee	et the hydrology criterion	n.	
	SOILS			SOILS				
Map Unit Name:	Hosmer silt loam, 6 to 12 percent slopes, severely erode		Map Unit Name:	Hosmer silt lo	silt loam, 6 to 12 percent slopes, severely erode			
Profile Description:				Profile Description:				
DEPTH	MATRIX	MOTTLE	TEXTURE	DEPTH	MATRIX	MOTTLE	TEXTURE	
0-16"	10YR 5/2	10YR 4/6 and 10YR 5	6 silty clay loam	0-16"	10YR 5/4		silt loam	
	HYDRIC	SOIL INDICATORS			HYDRIC S	OIL INDICATORS	· 	
Histosol		Concretions		Histosol		Concretions		
Histic epipedon		Organic content		Histic epipedon		Organic content		
Sulfidic odor		Organic streaking		Sulfidic odor		Organic streaking		
Aquic moisture reg.		Local hydric soils list		Aquic moisture reg.		Local hydric soils list		
Gleyed		National hydric soils		Gleyed		National hydric soils l		
Low Chroma	X	Other (ex. in Remark	s)	Low Chroma		Other (ex. in Remark	s)	
Remarks: Meets the hydric soil criterion.				Remarks: Does not meet the hydric soil criterion.				
·		D DETERMINATION			WETLAND	DETERMINATION		
Hydrophytic vegetation present? X YesNo			Hydrophytic vegetat	tion present?	_Yes	X No		
Wetland hydrology present? X Yes No			Wetland hydrology		Yes	X No		
Hydric soils present? X Yes No			Hydric soils present	_	Yes	X No		
Sampling point within a wetland? X YesNo				Sampling point with	in a wetland?_	Yes	X No	

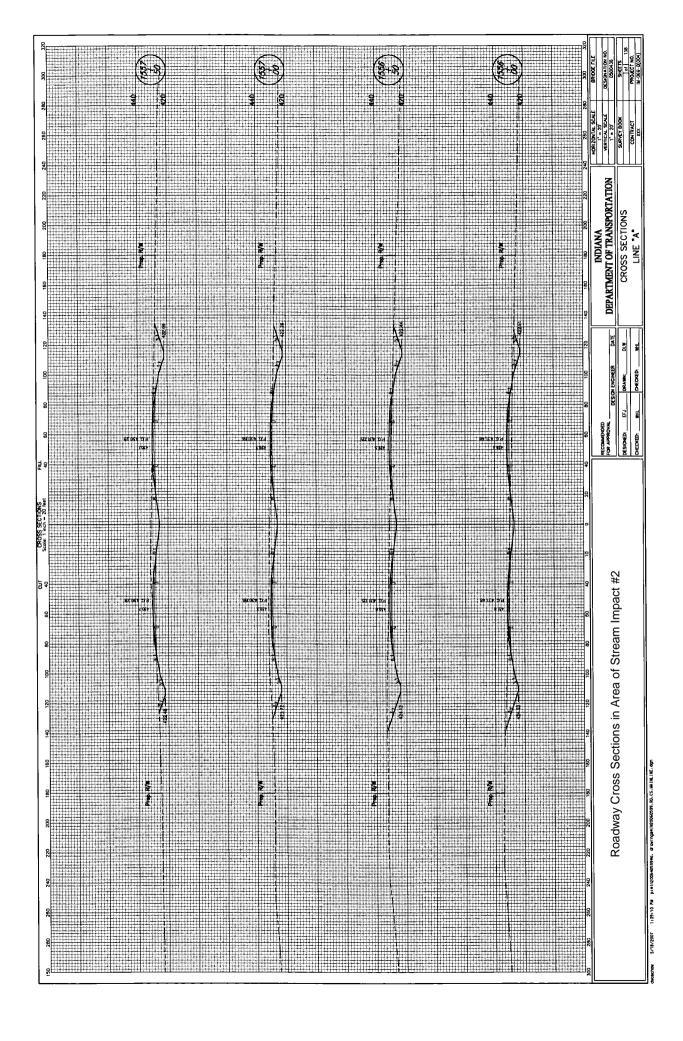
SKETCH:

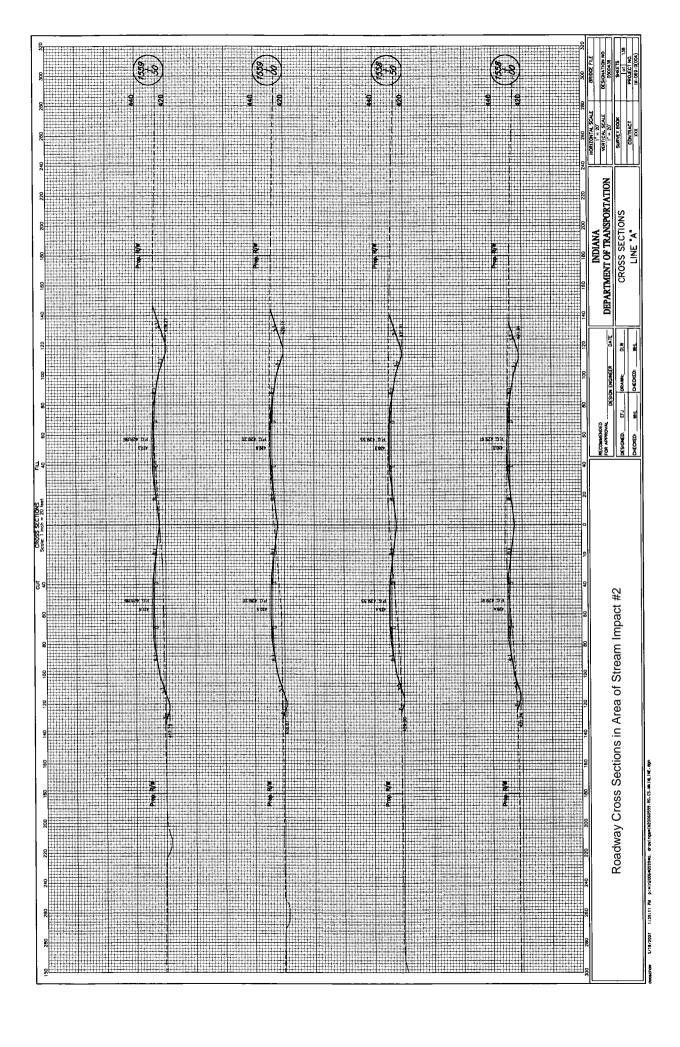
401 WQC APPLICATION ATTACHMENT #9 Cross Sections of Roadway At Water Resource Impact Locations

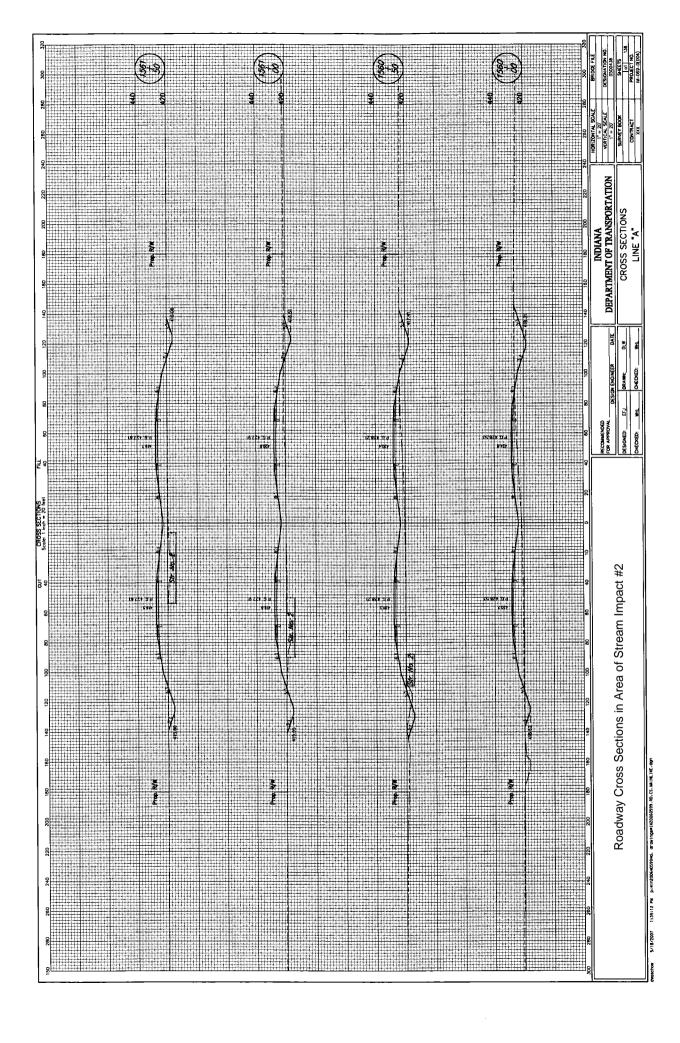


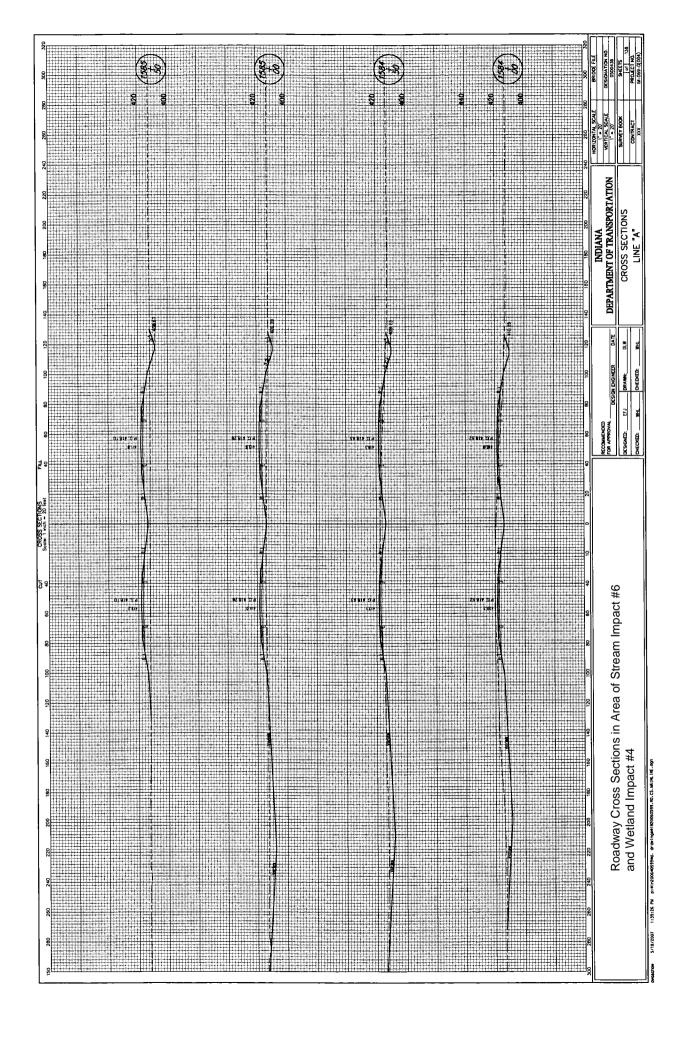


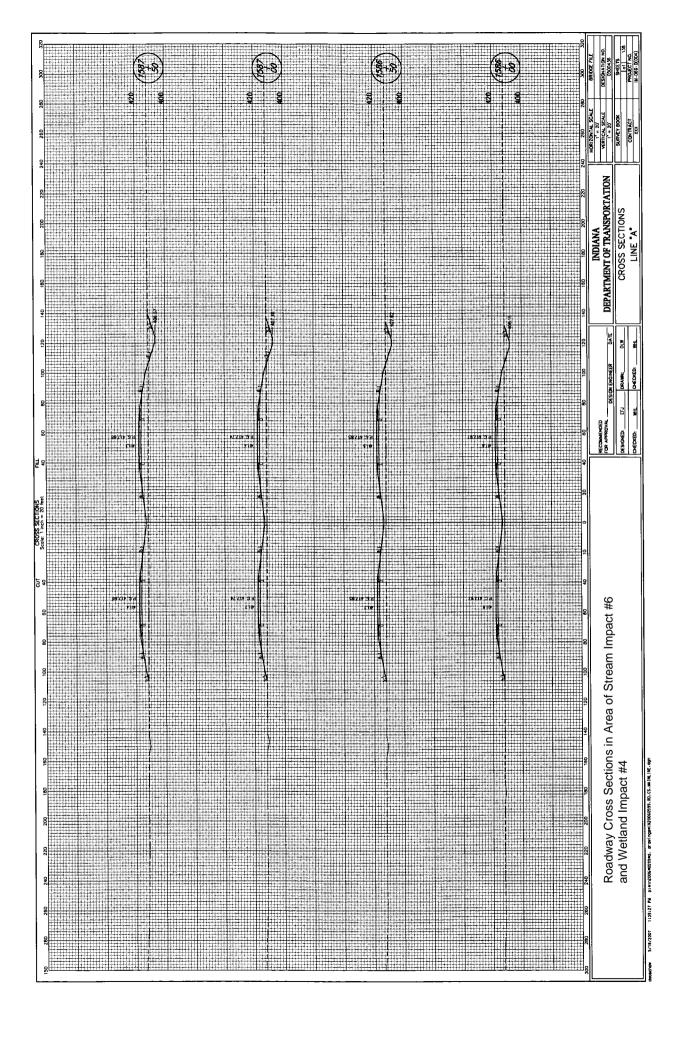


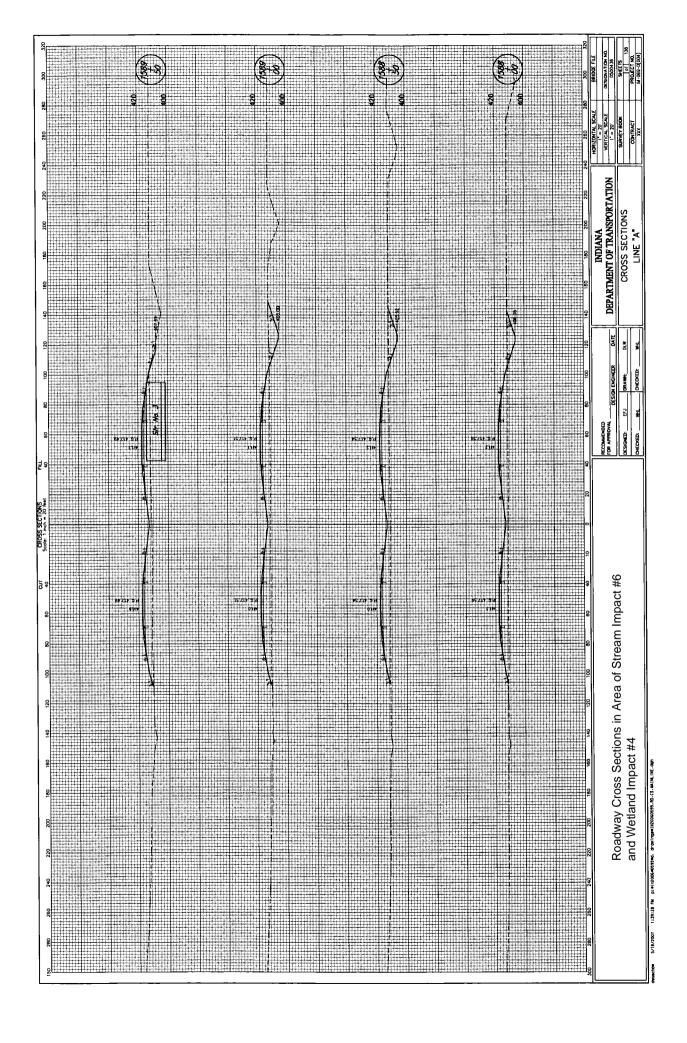


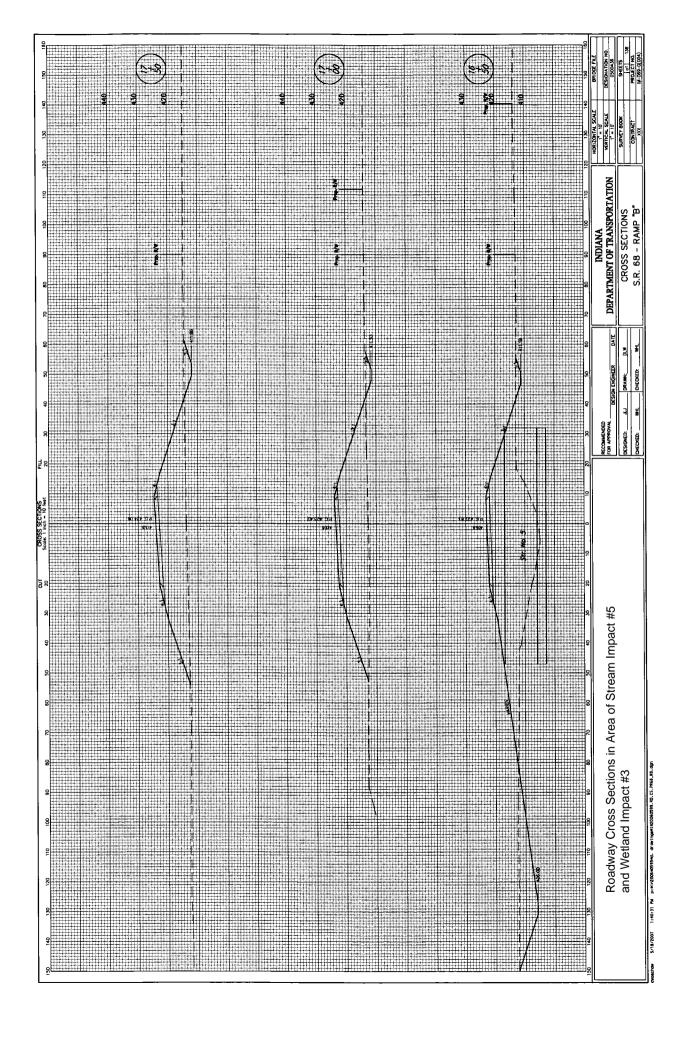


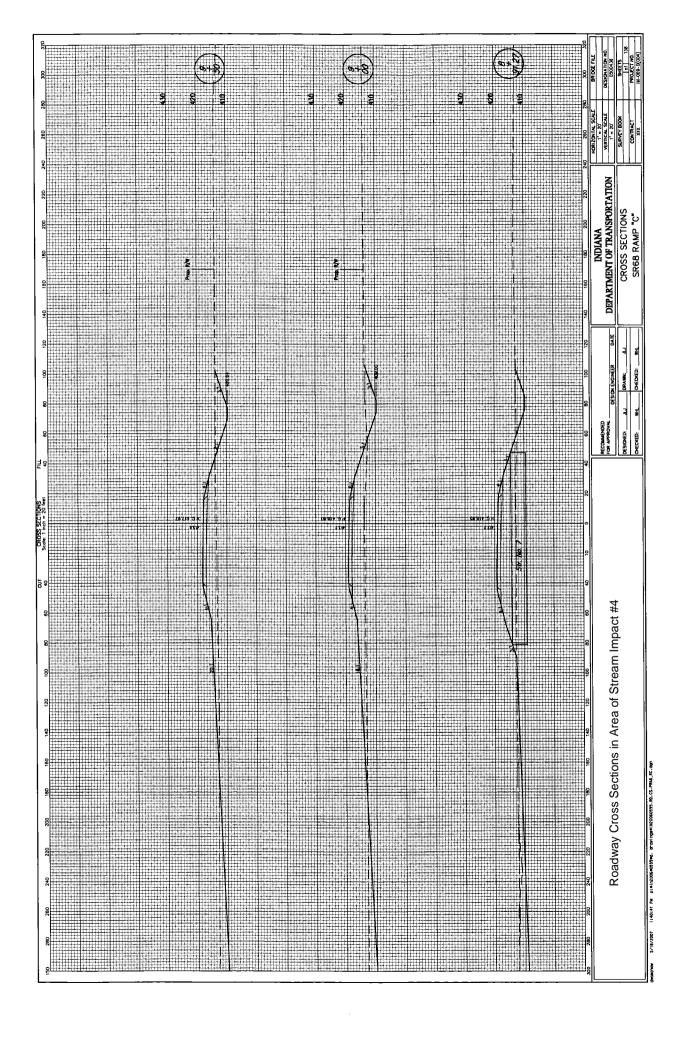


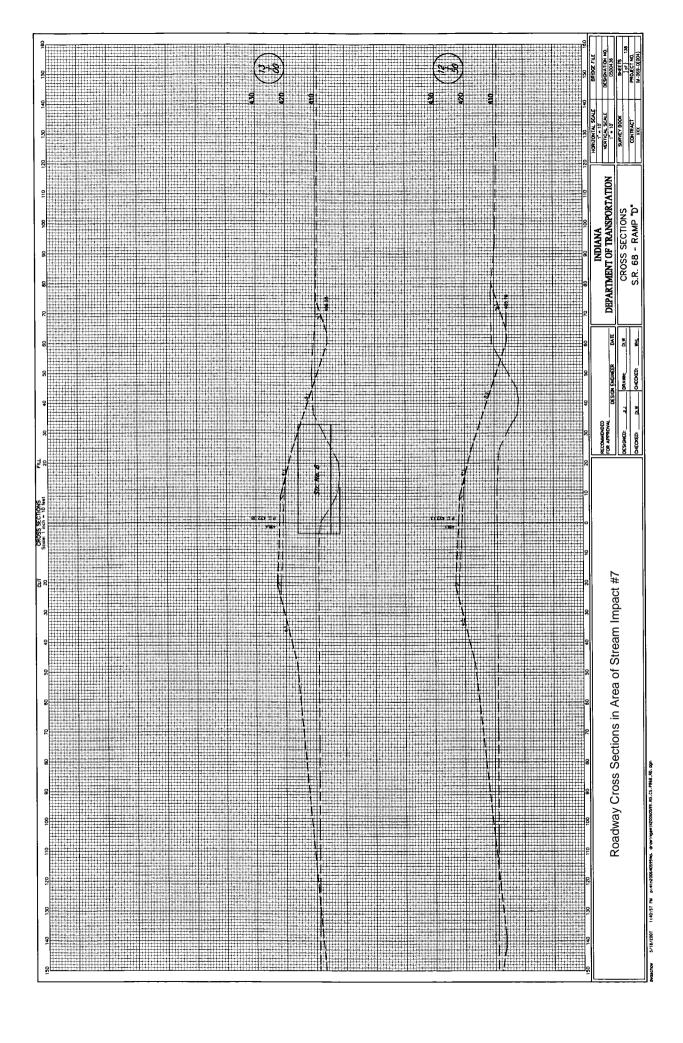


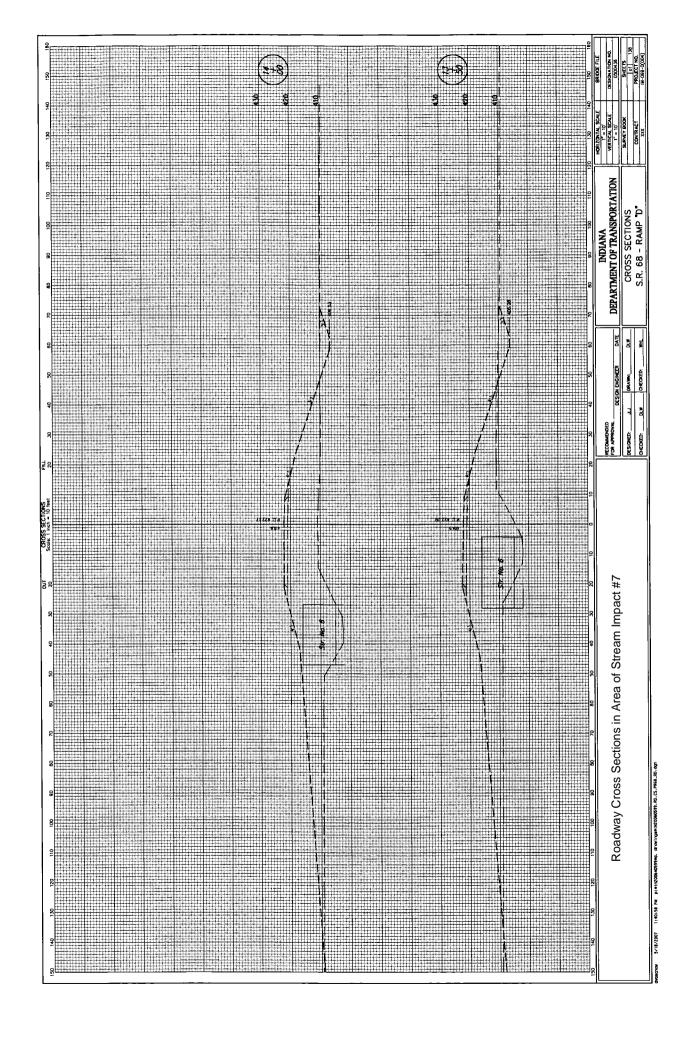


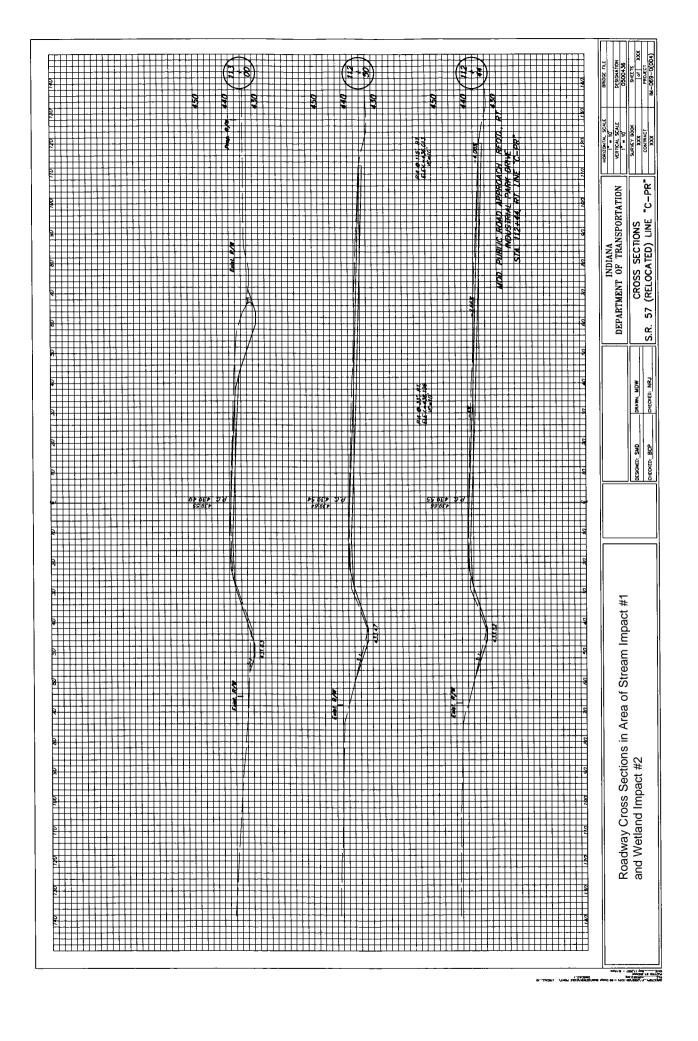


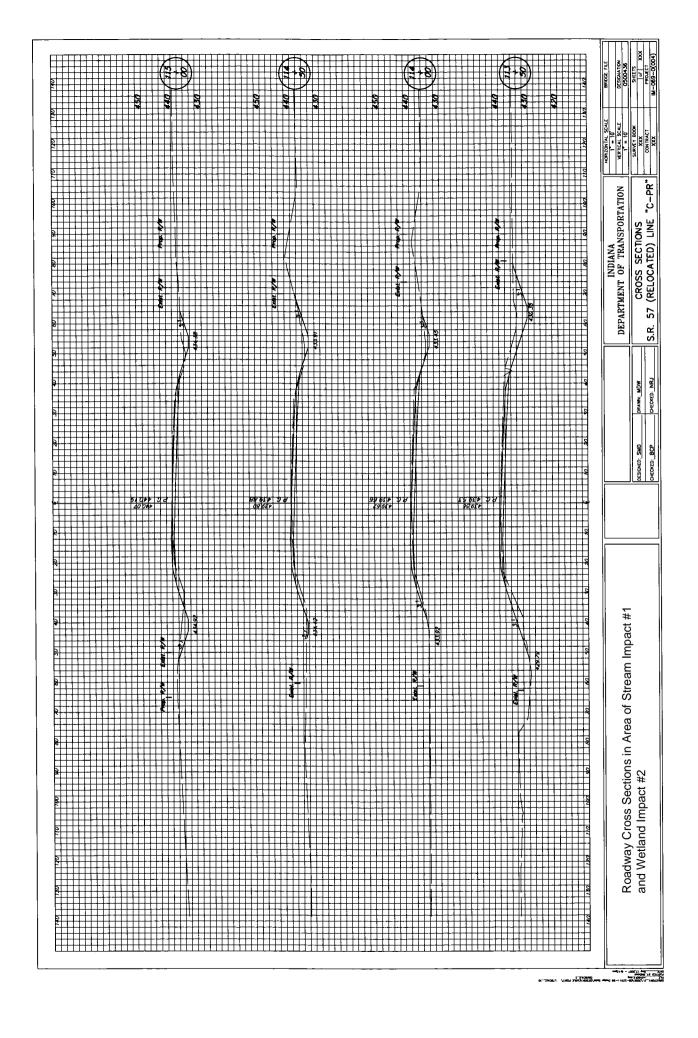


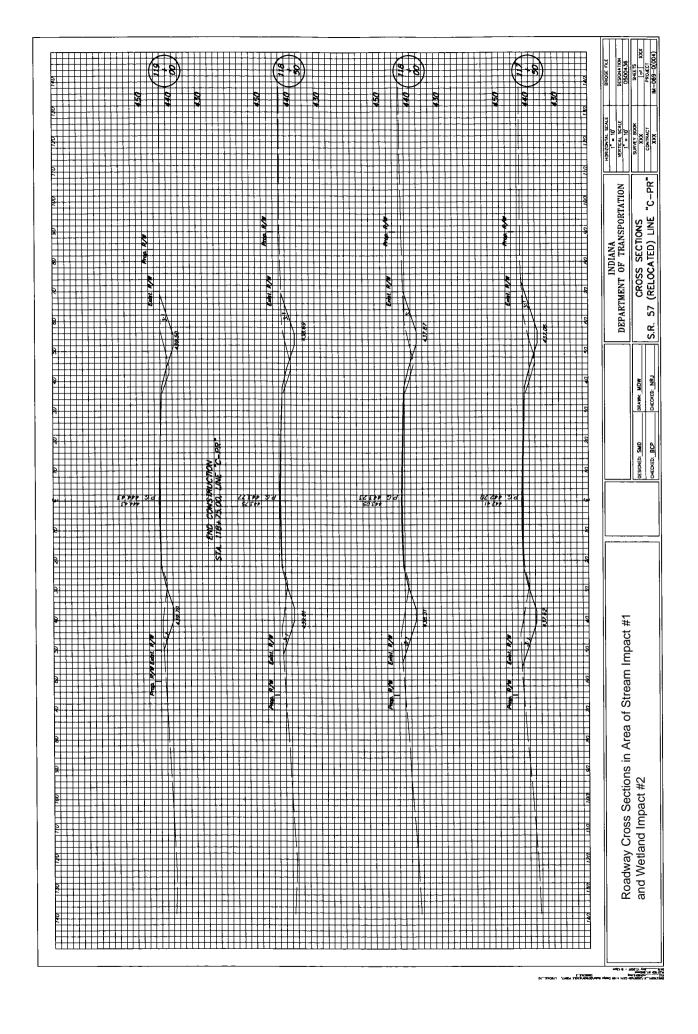


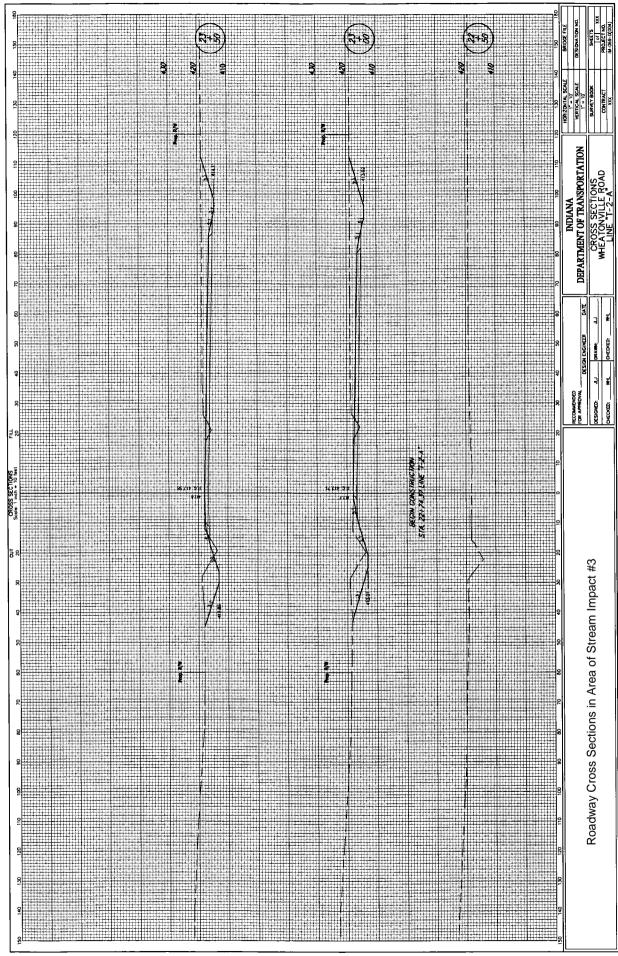


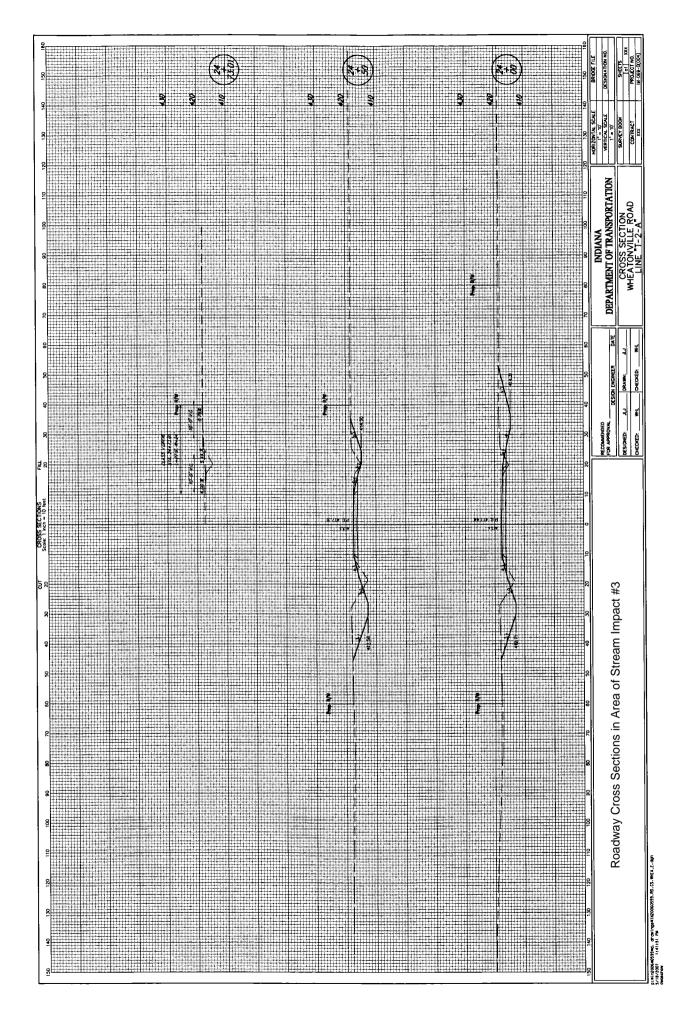


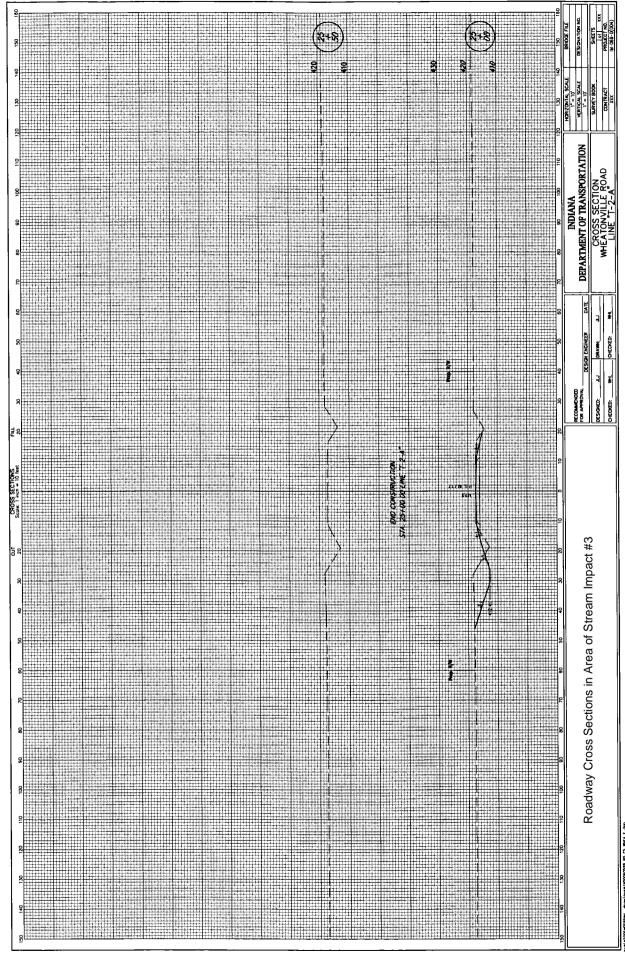


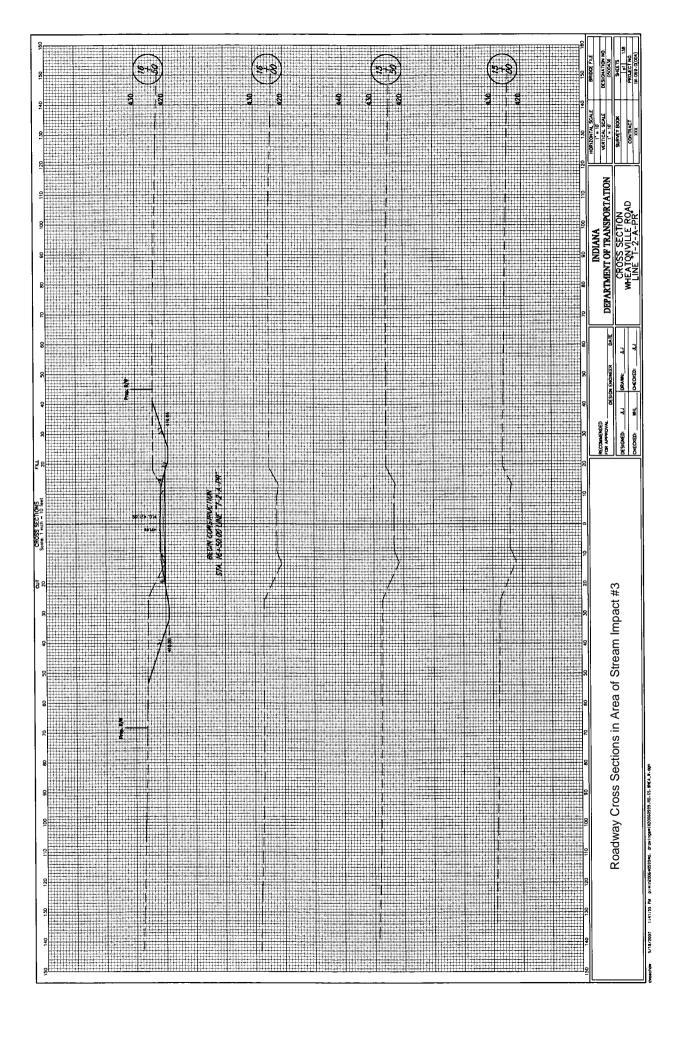


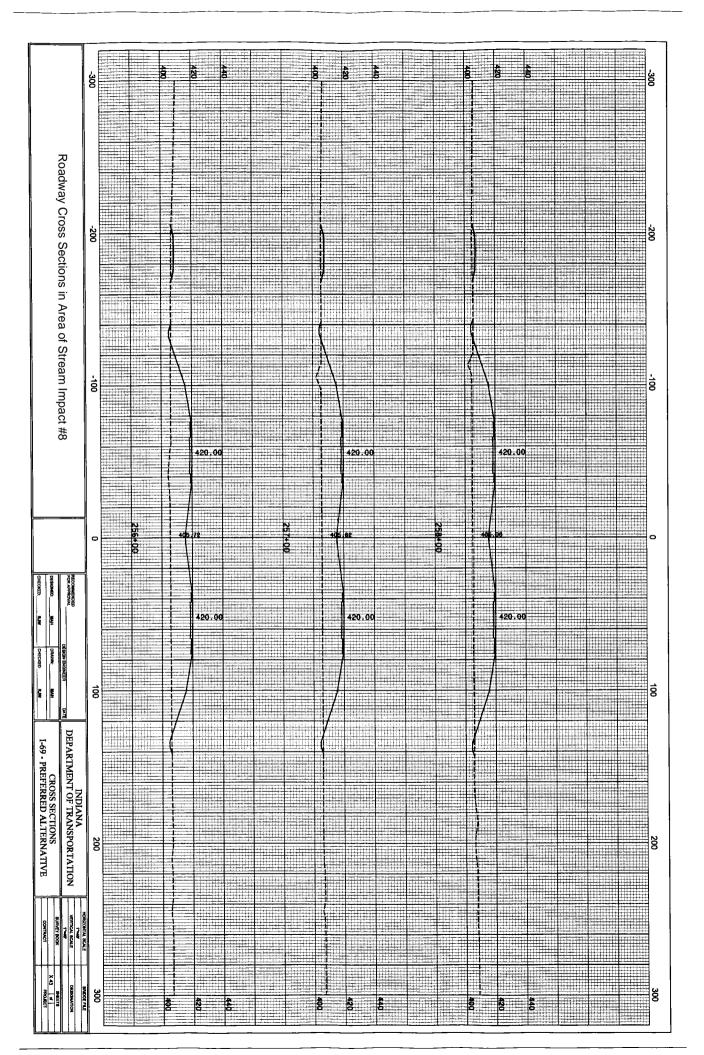


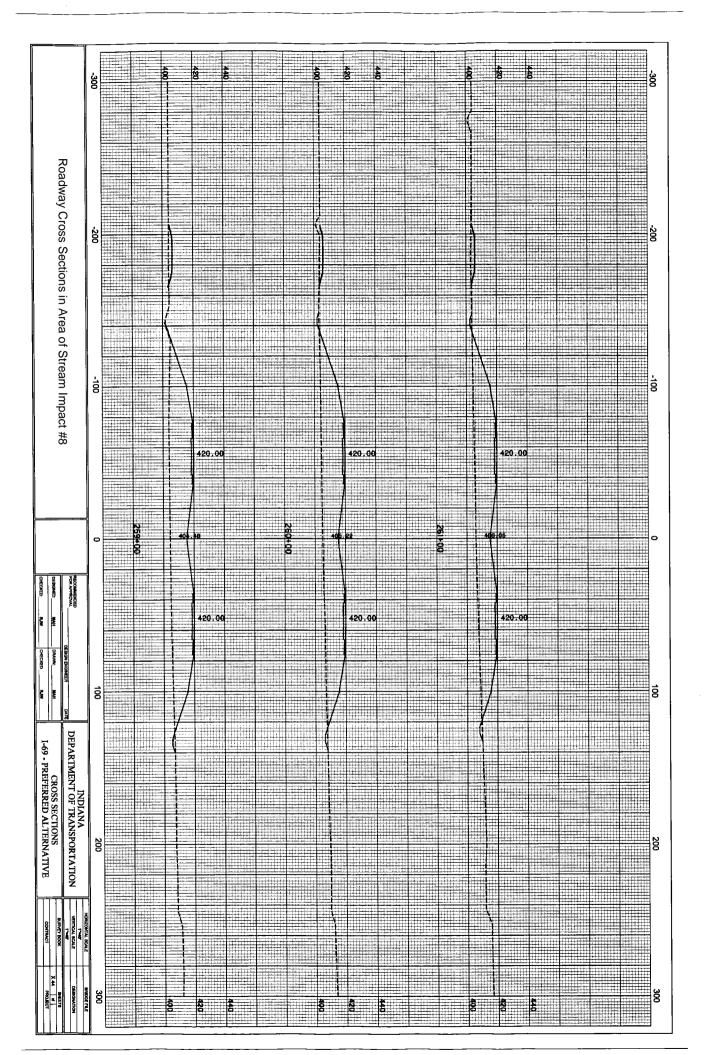


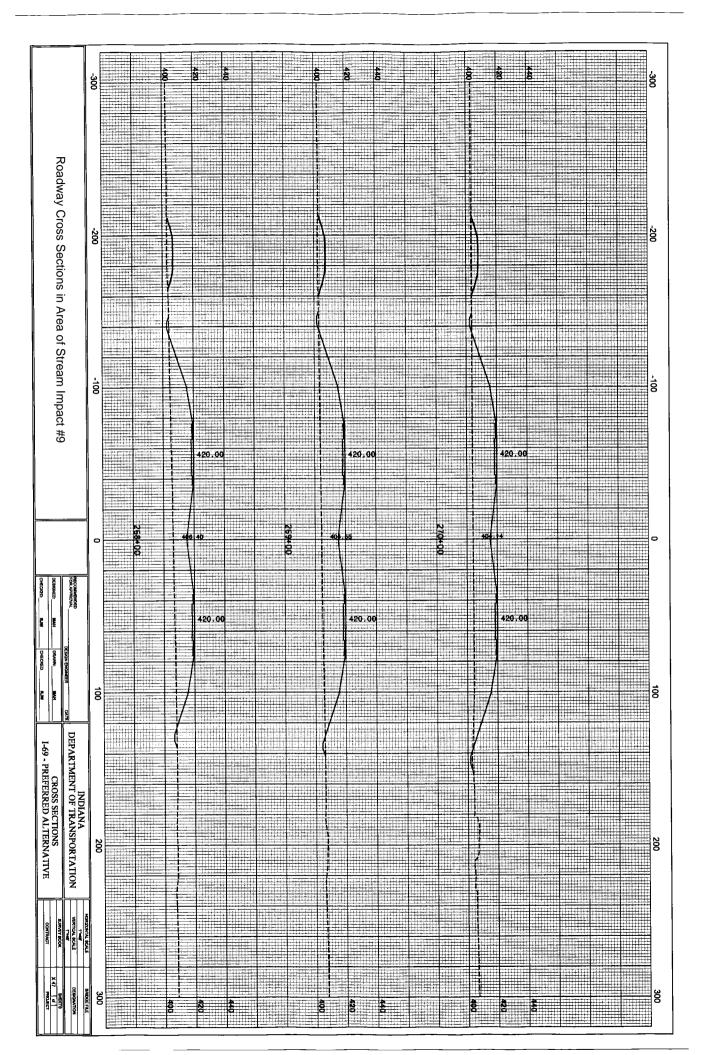


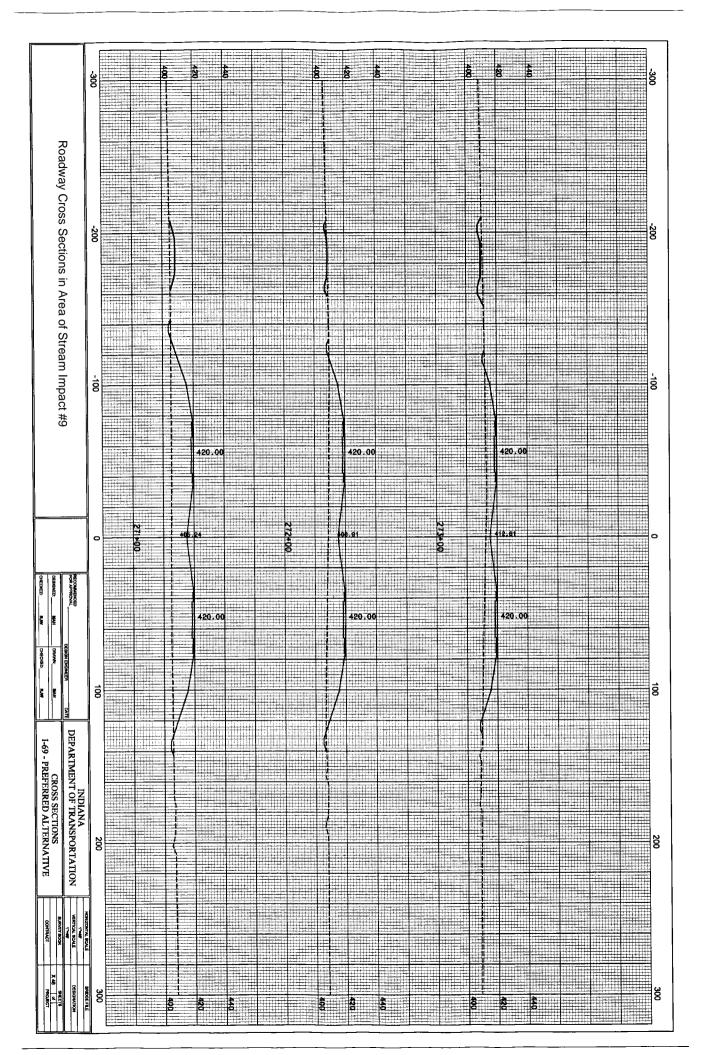


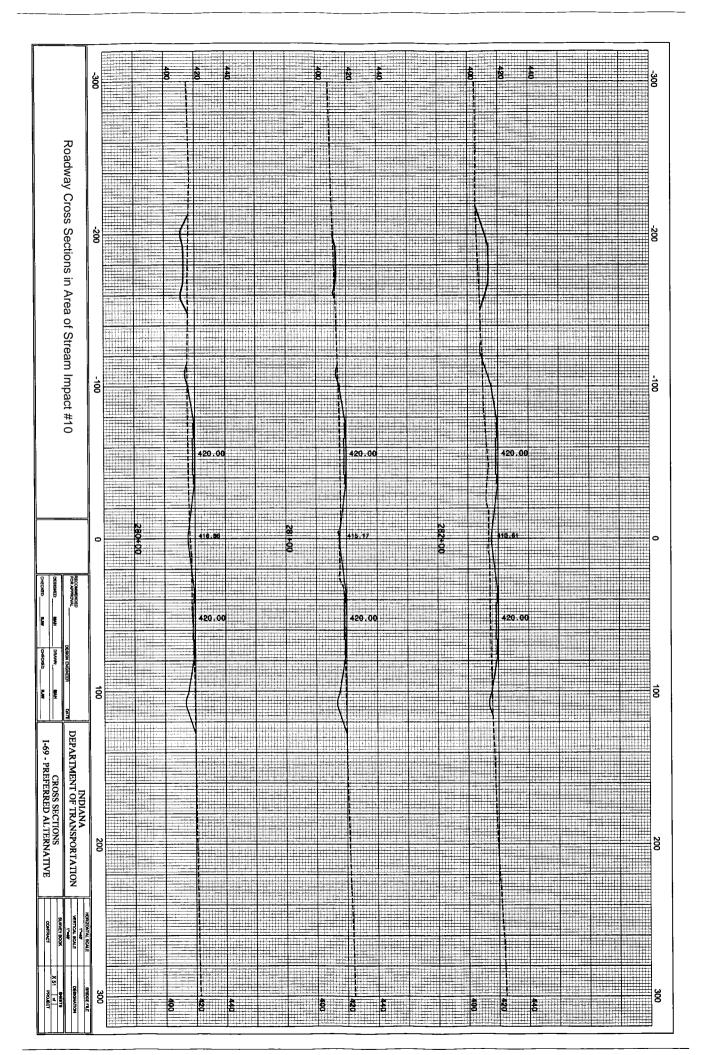


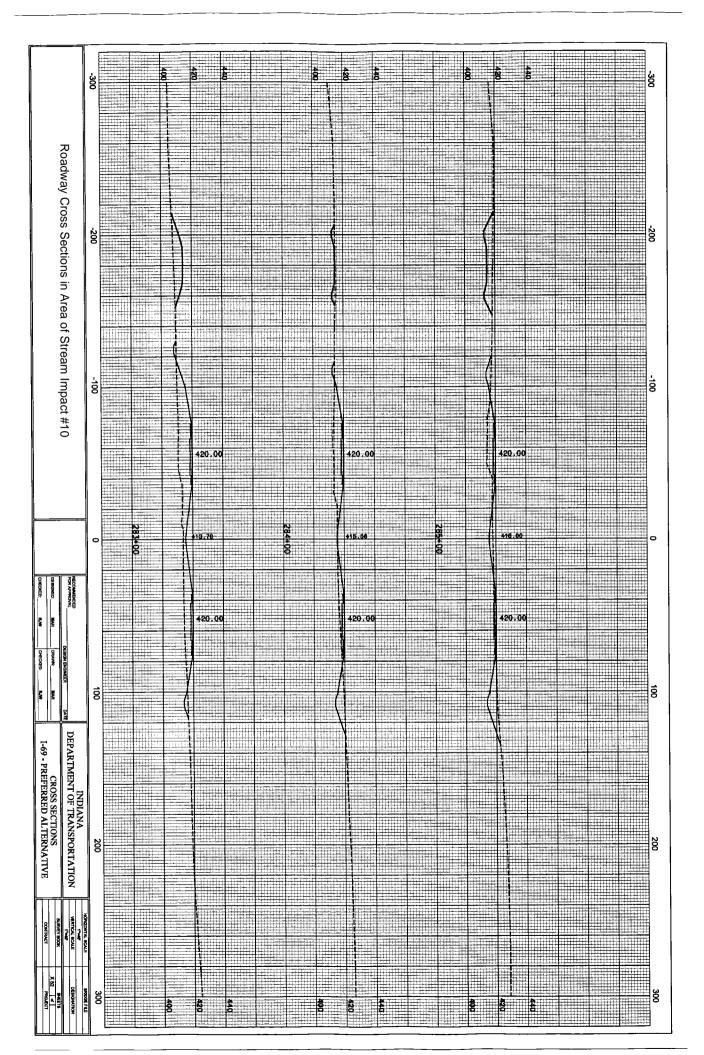


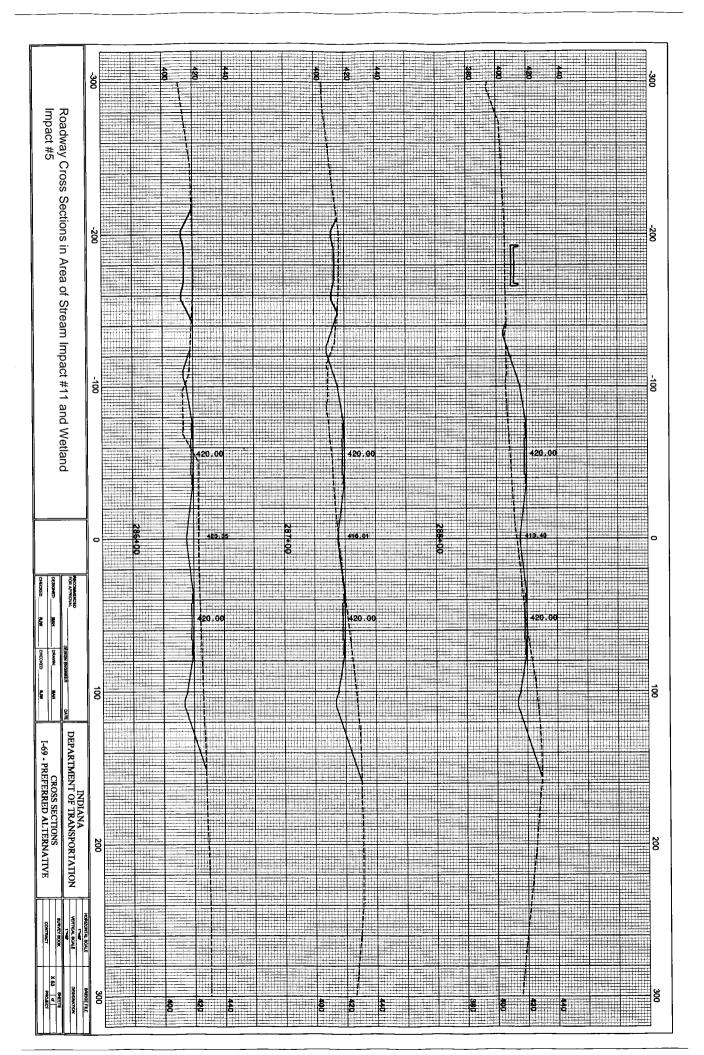


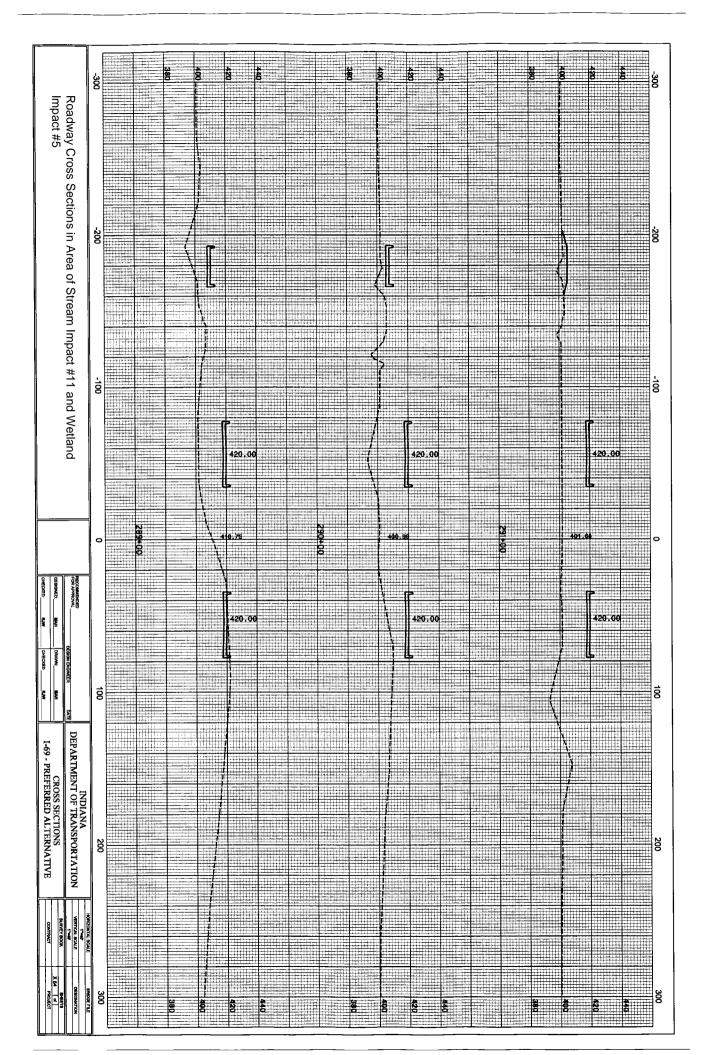


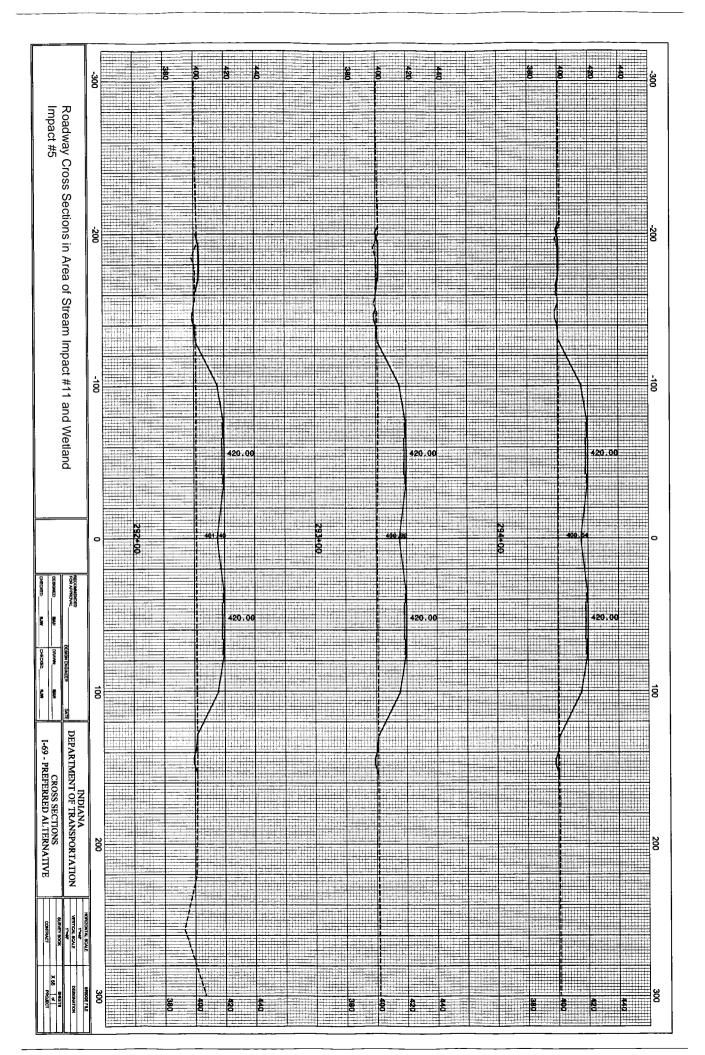


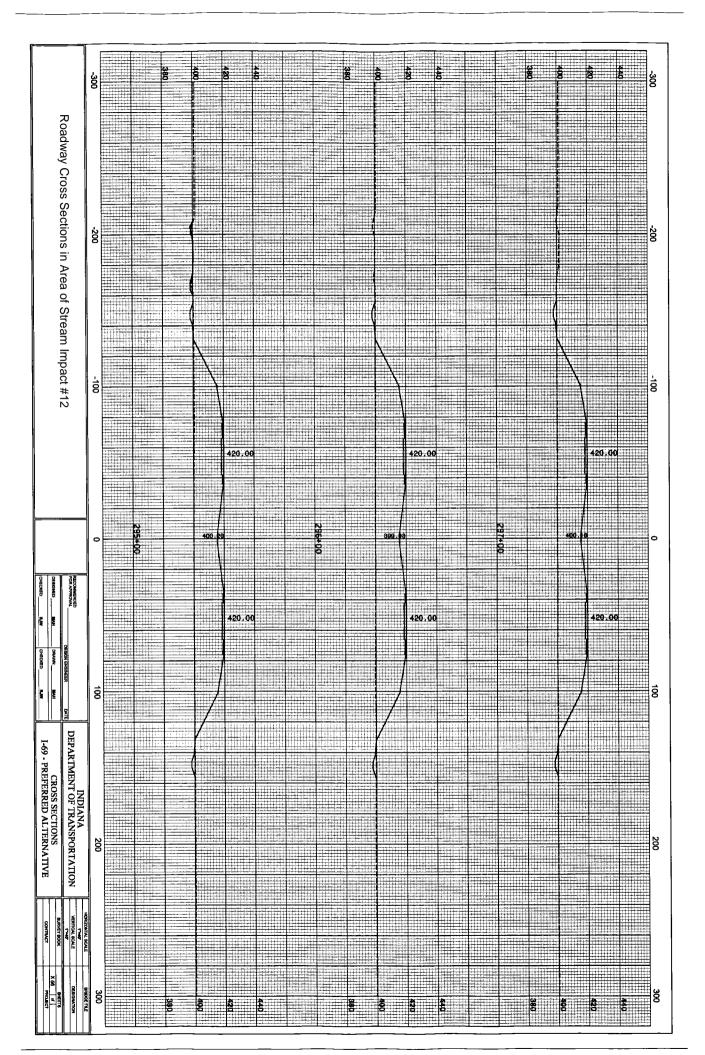


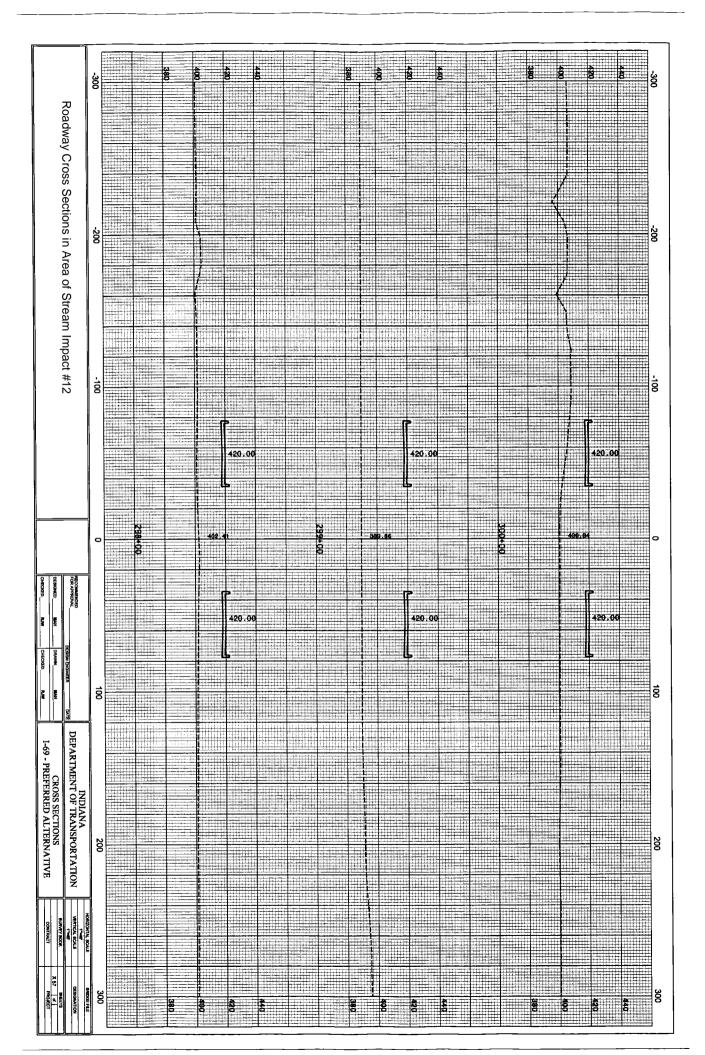


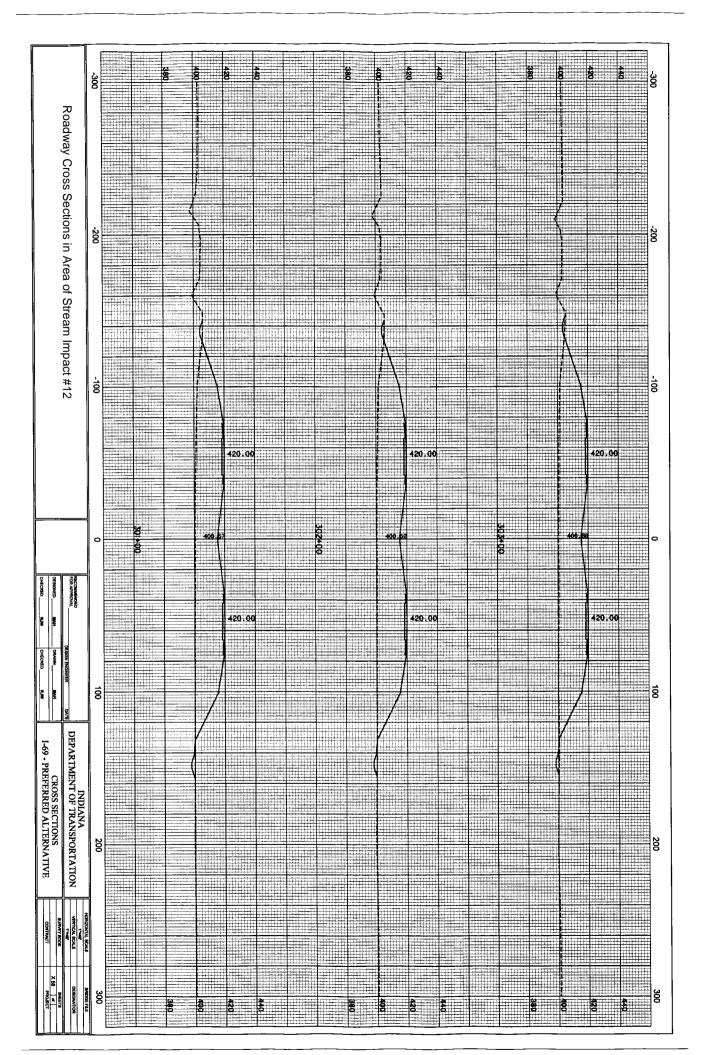


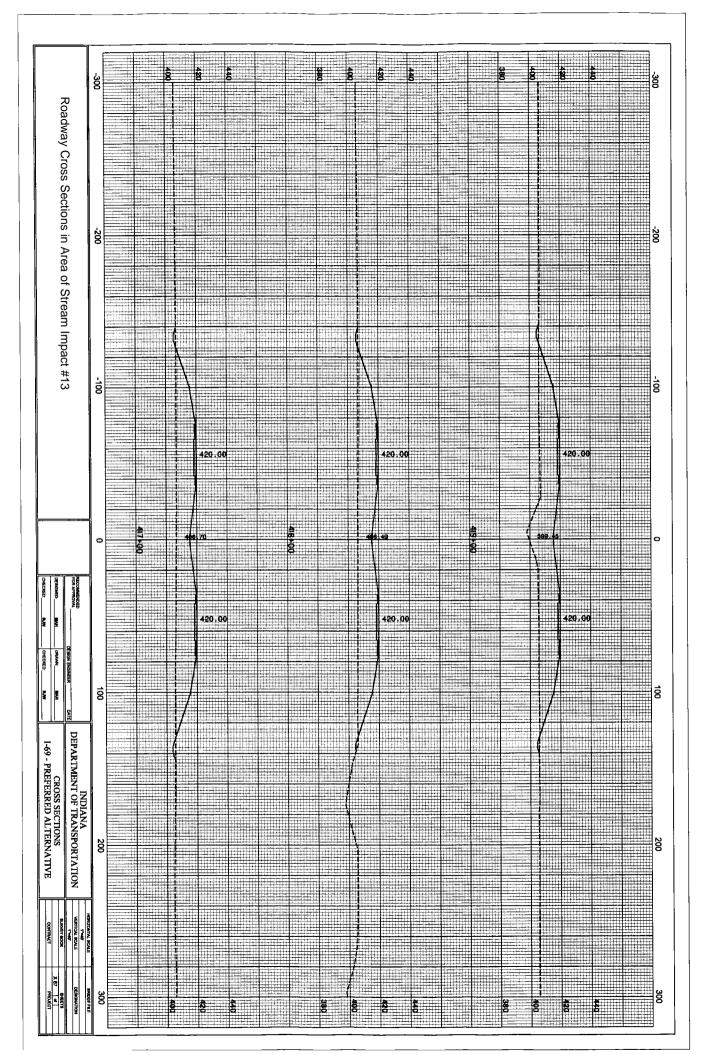


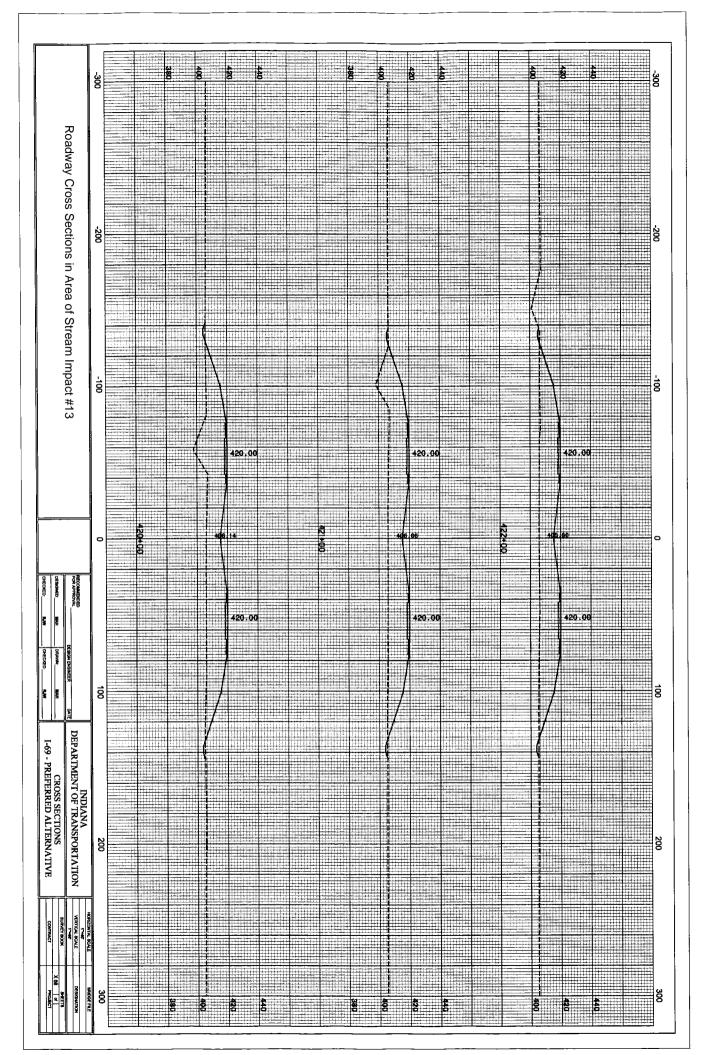


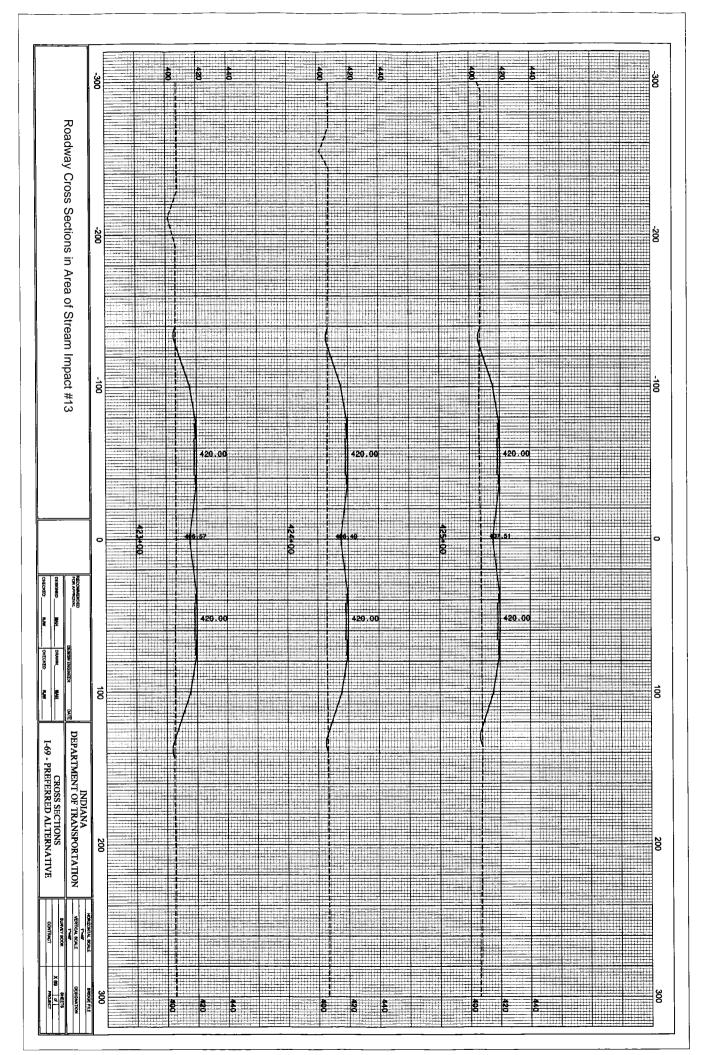


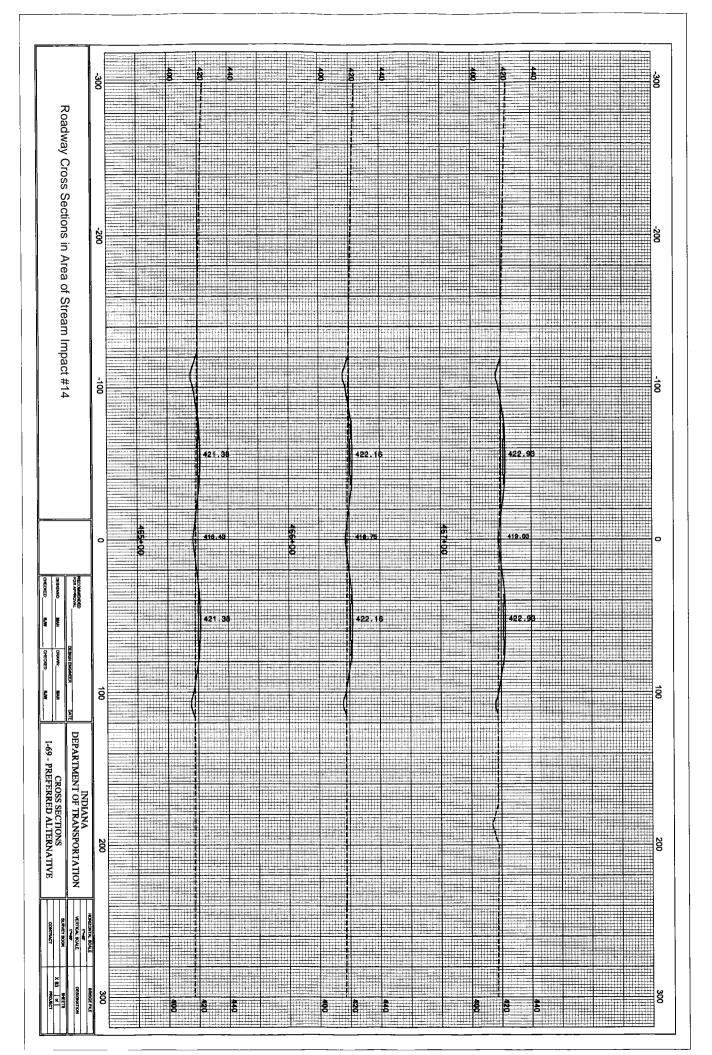


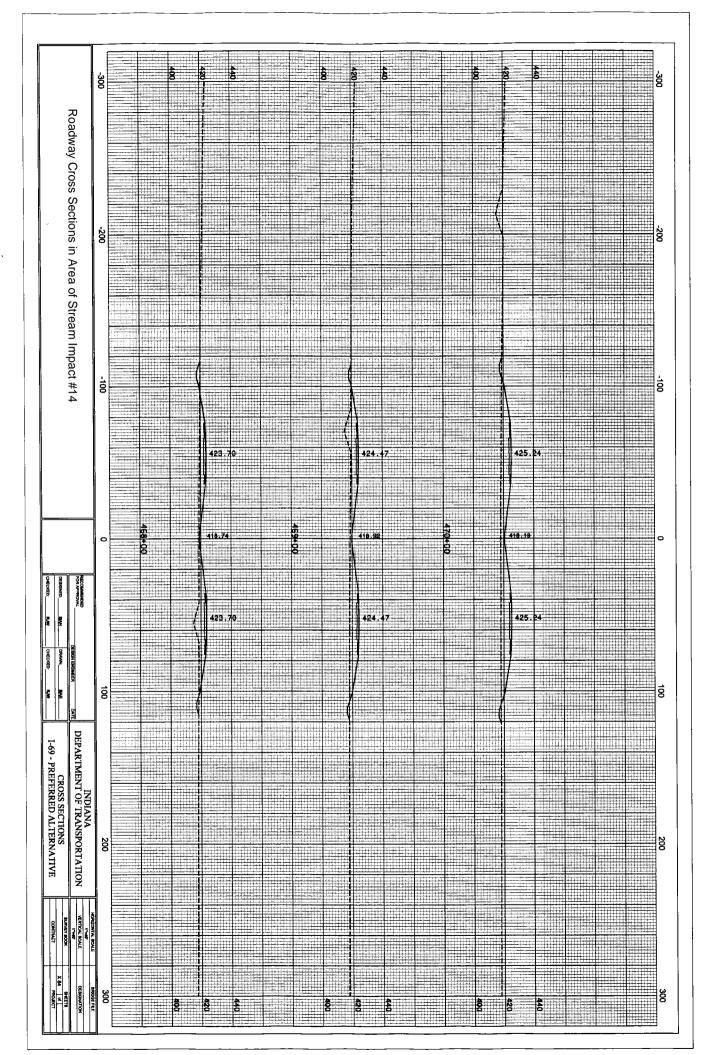


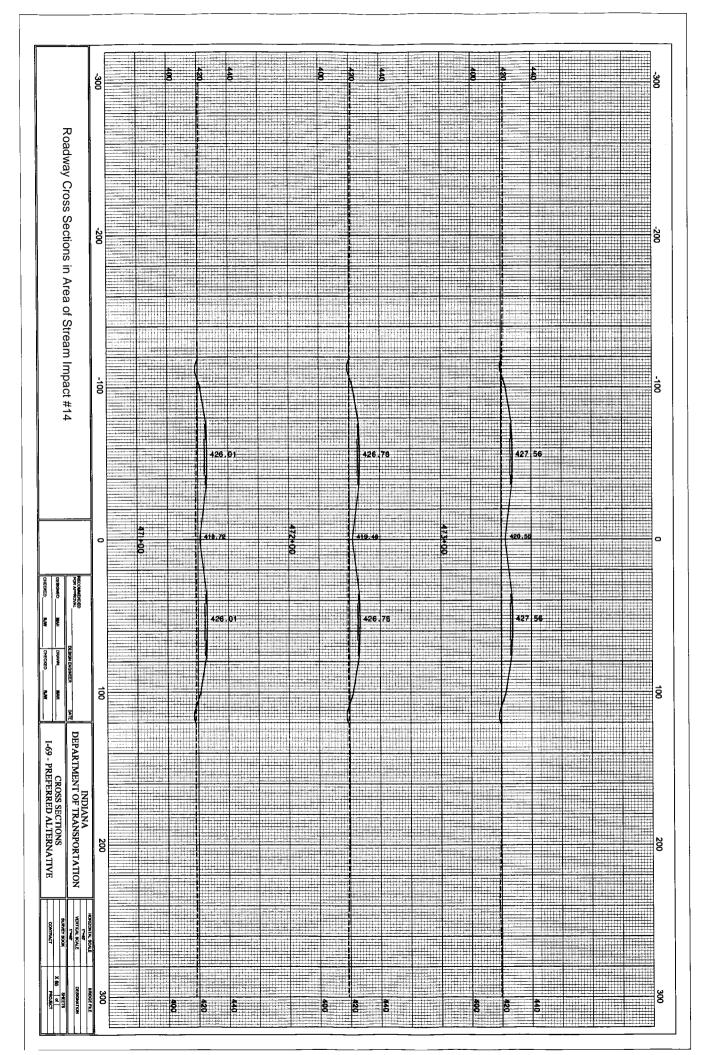


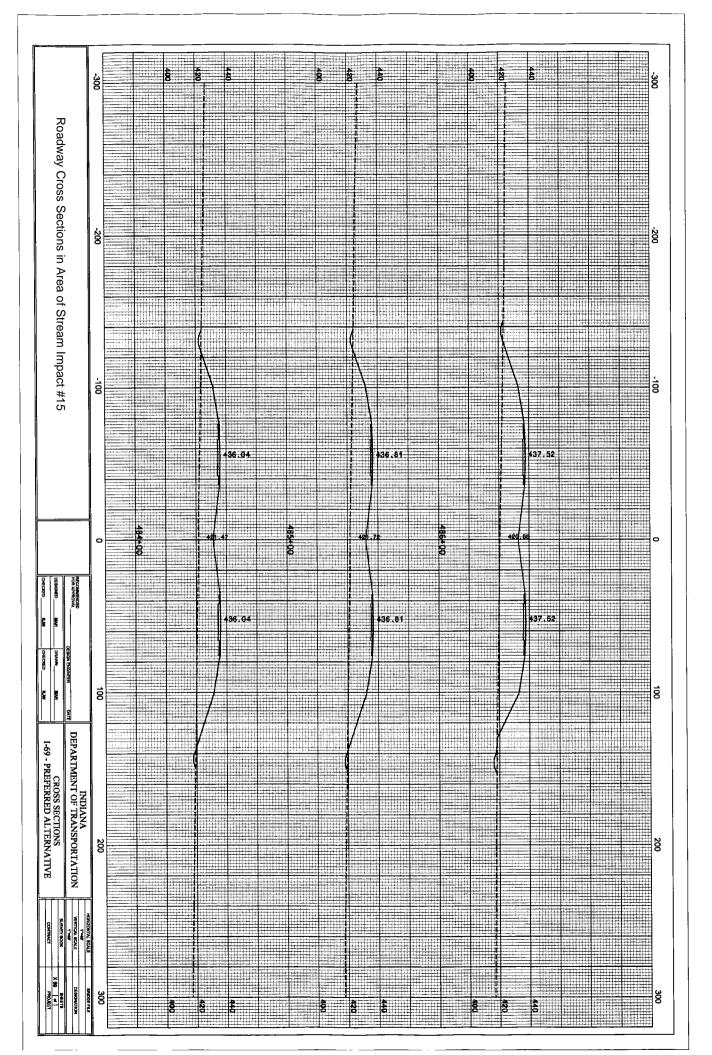


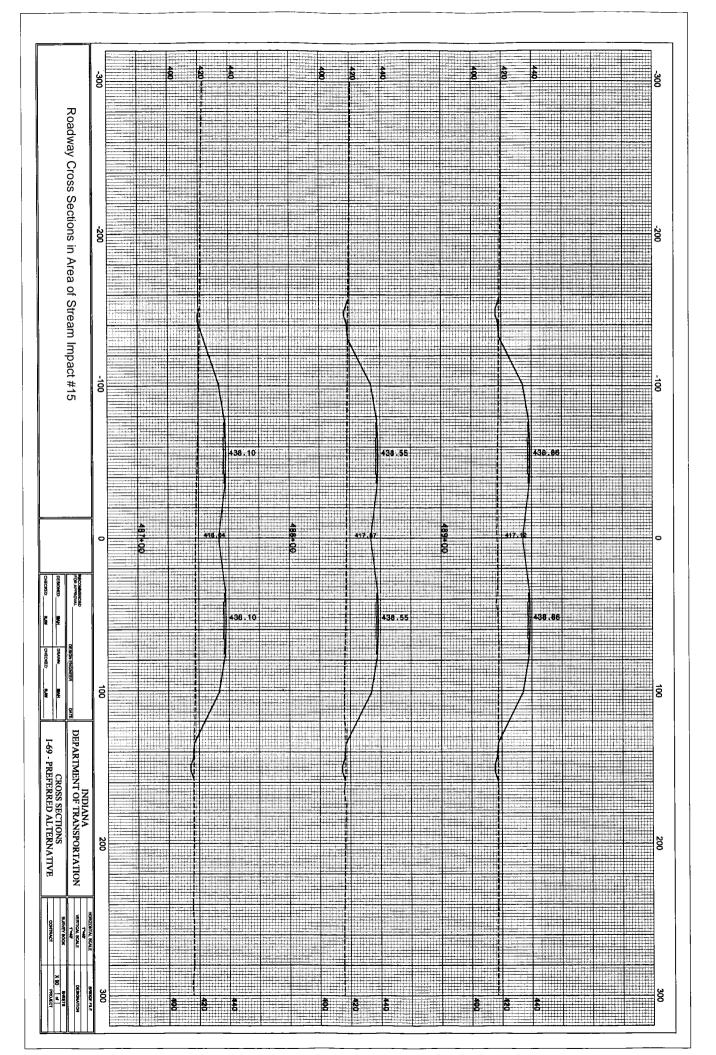


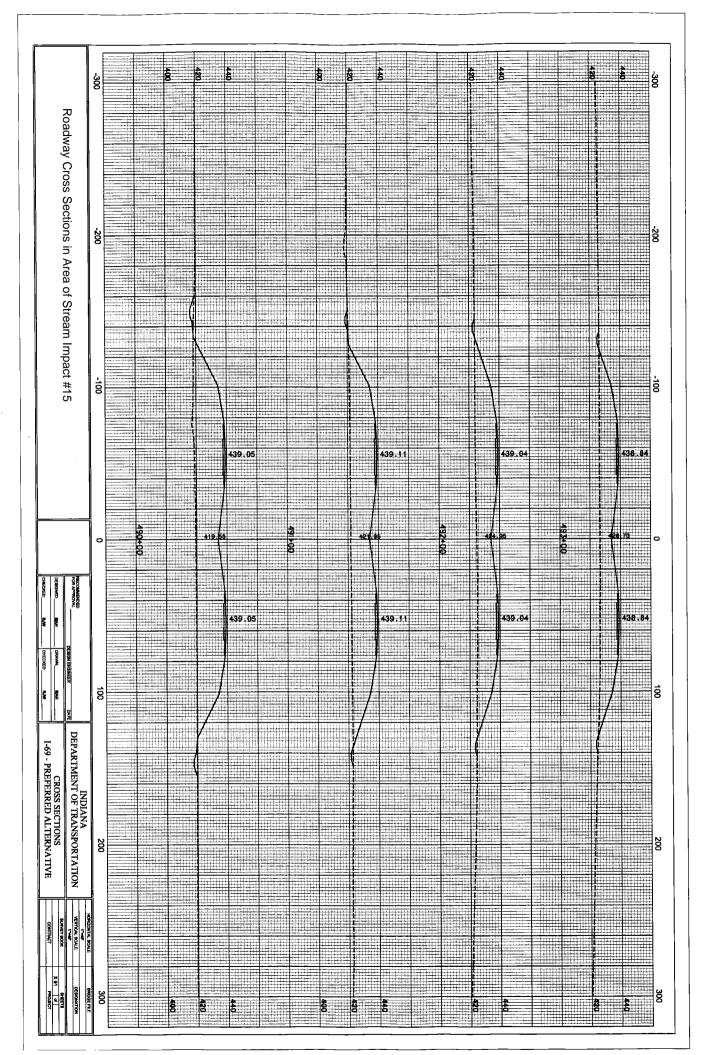


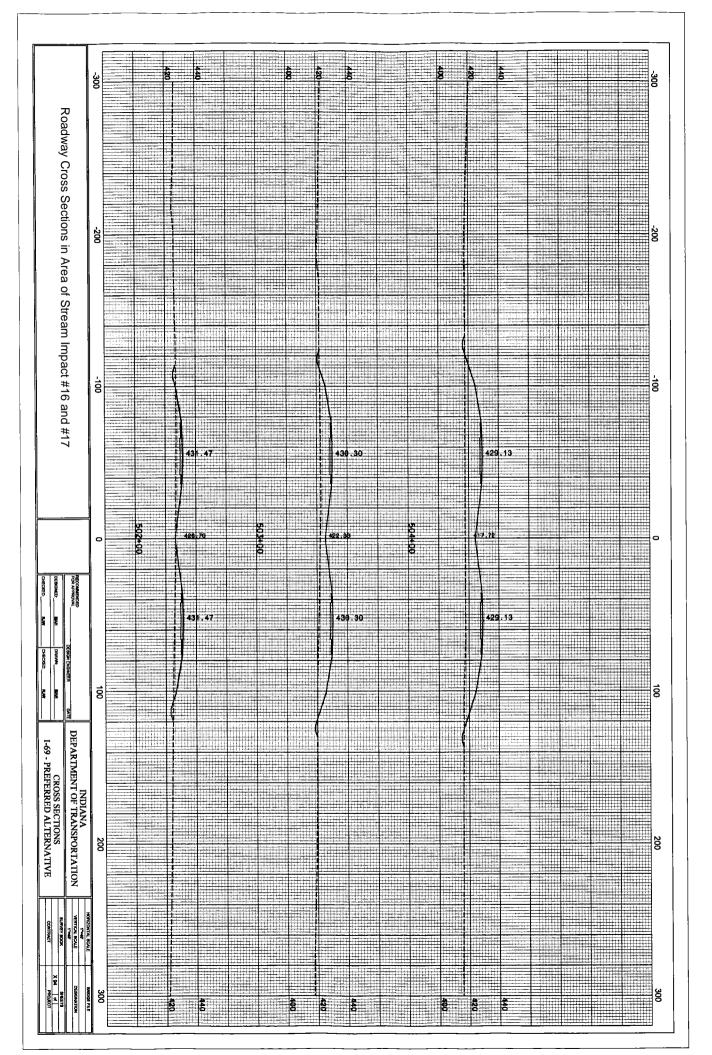


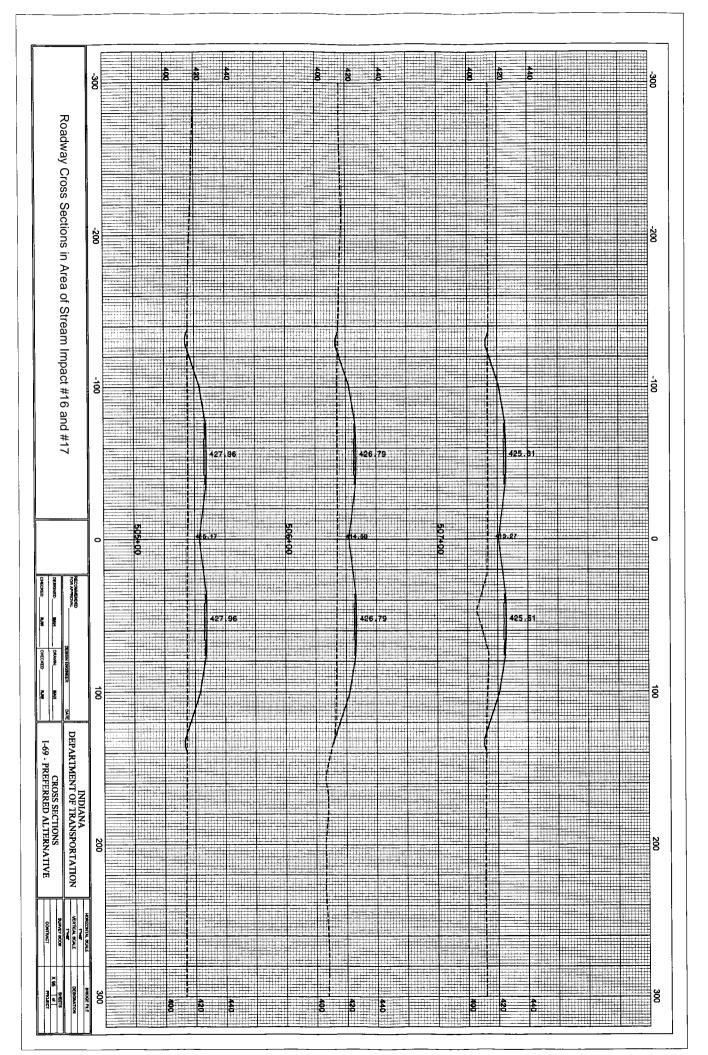


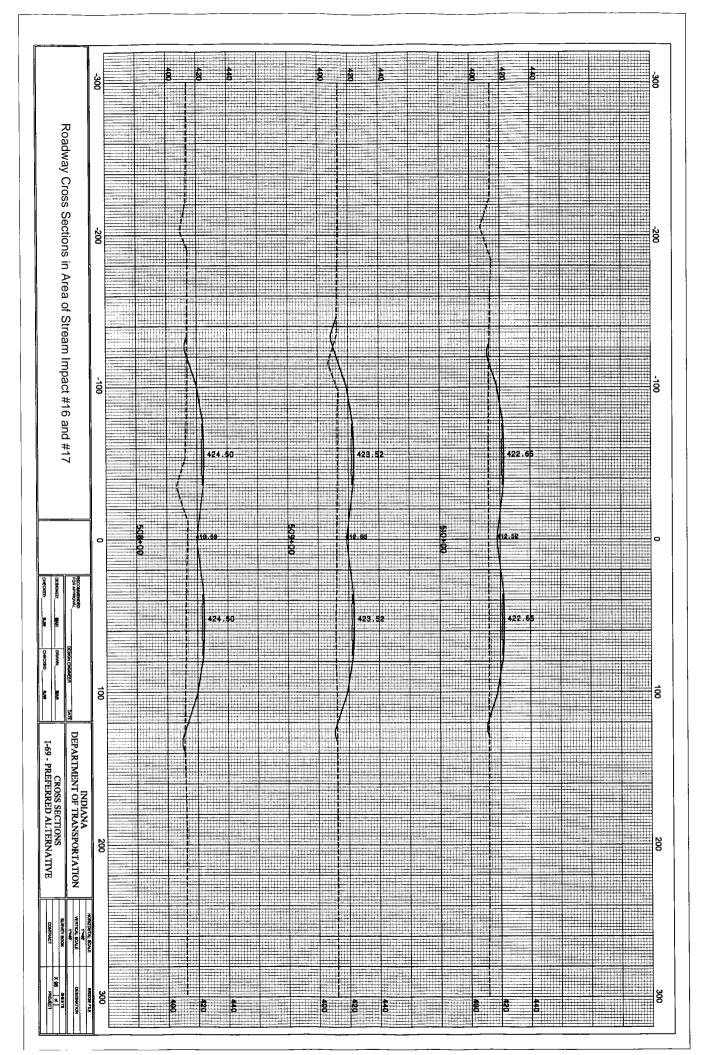


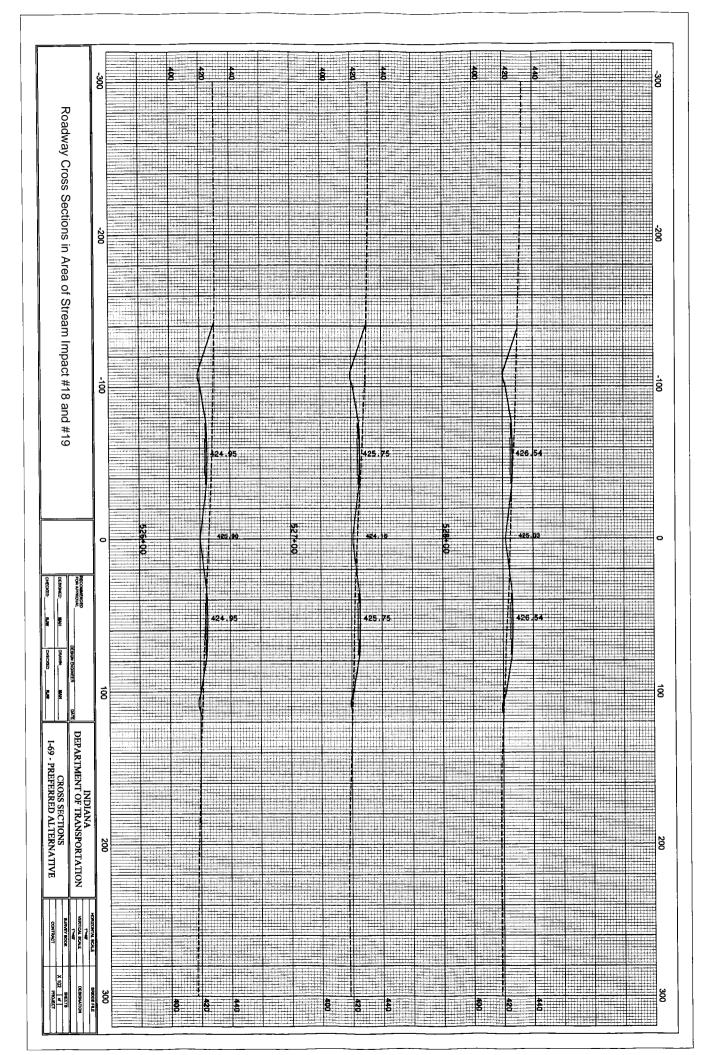


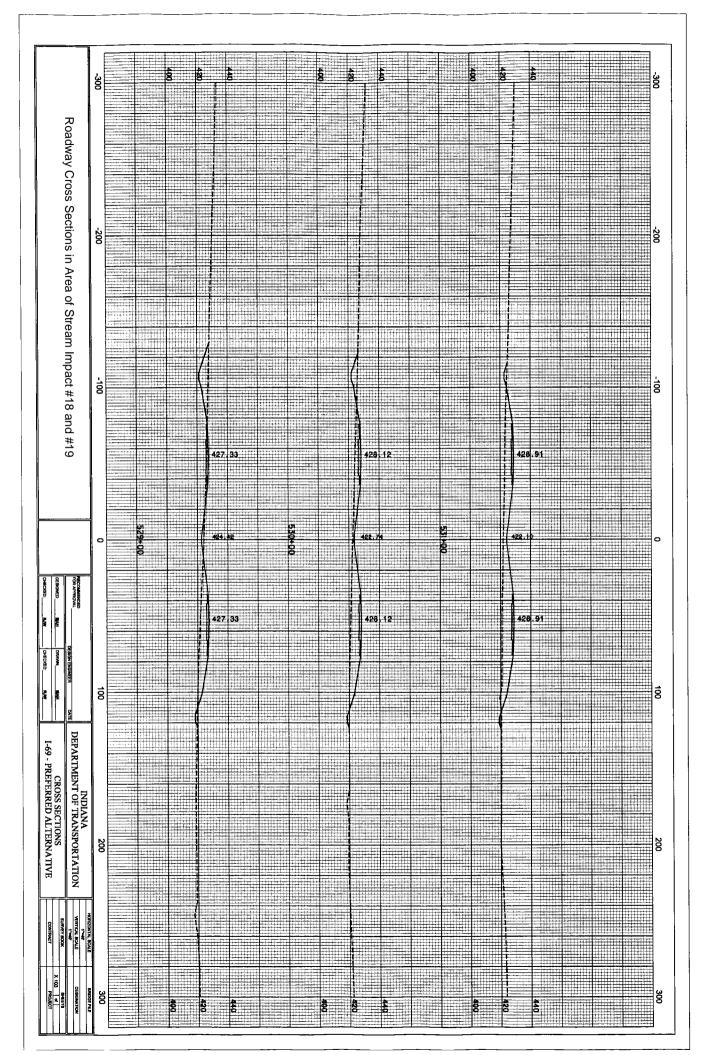


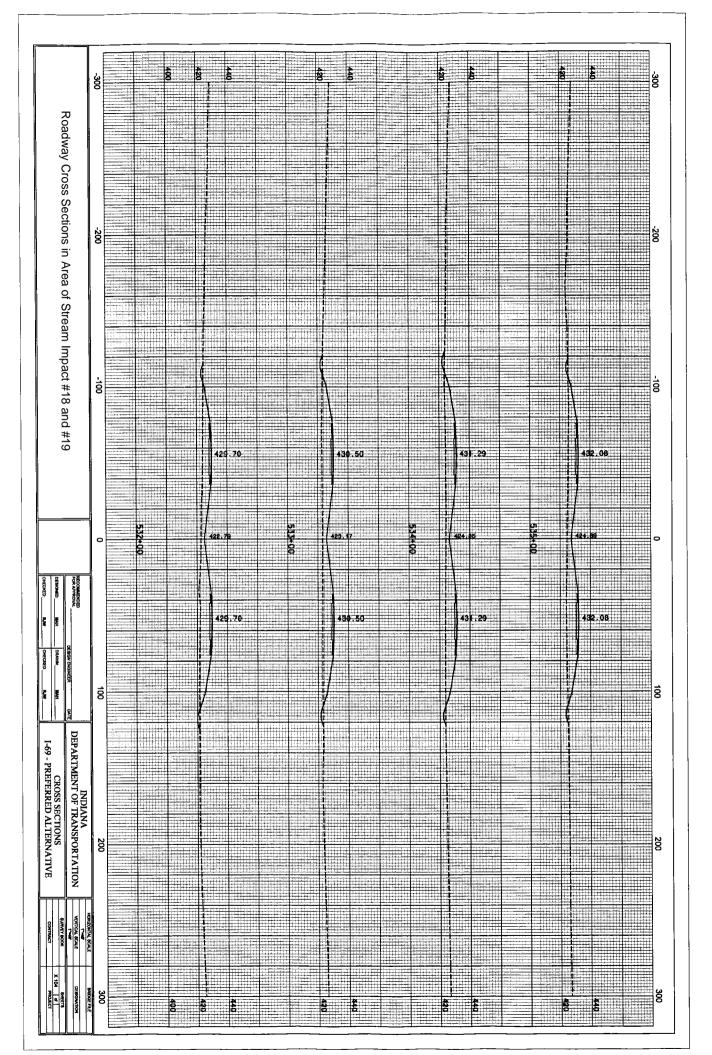


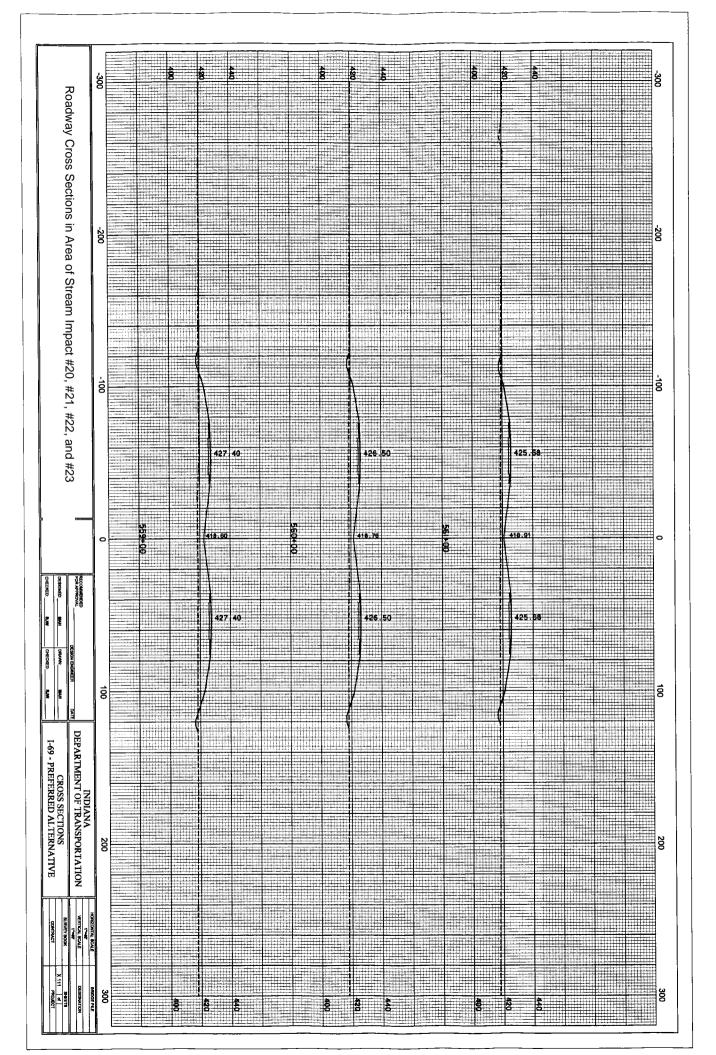


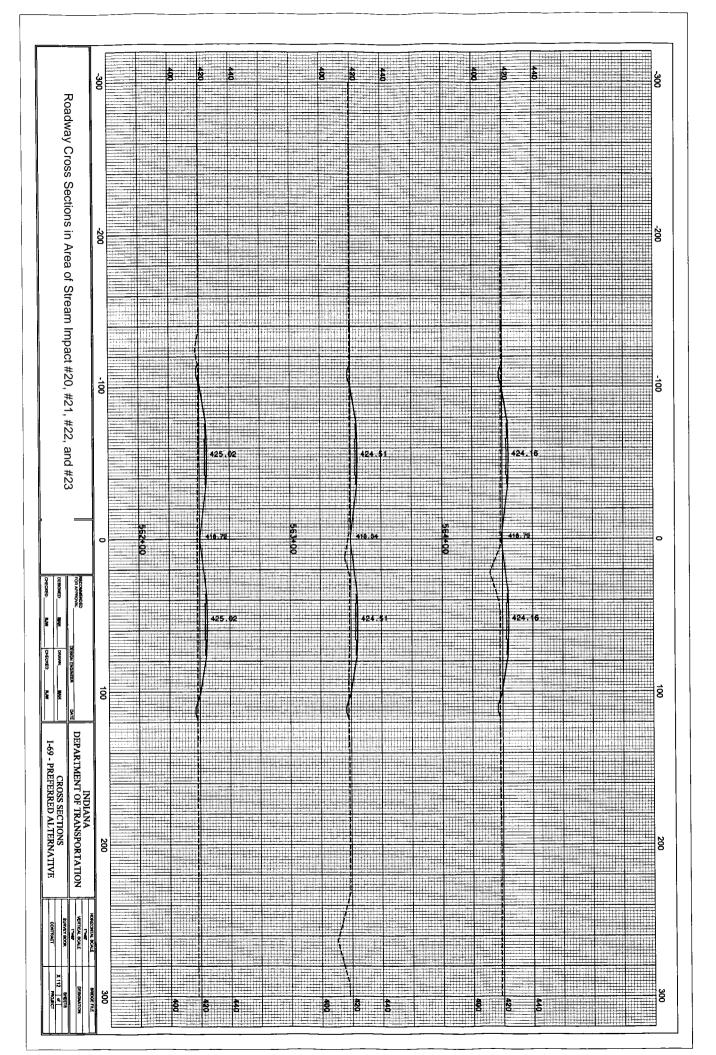


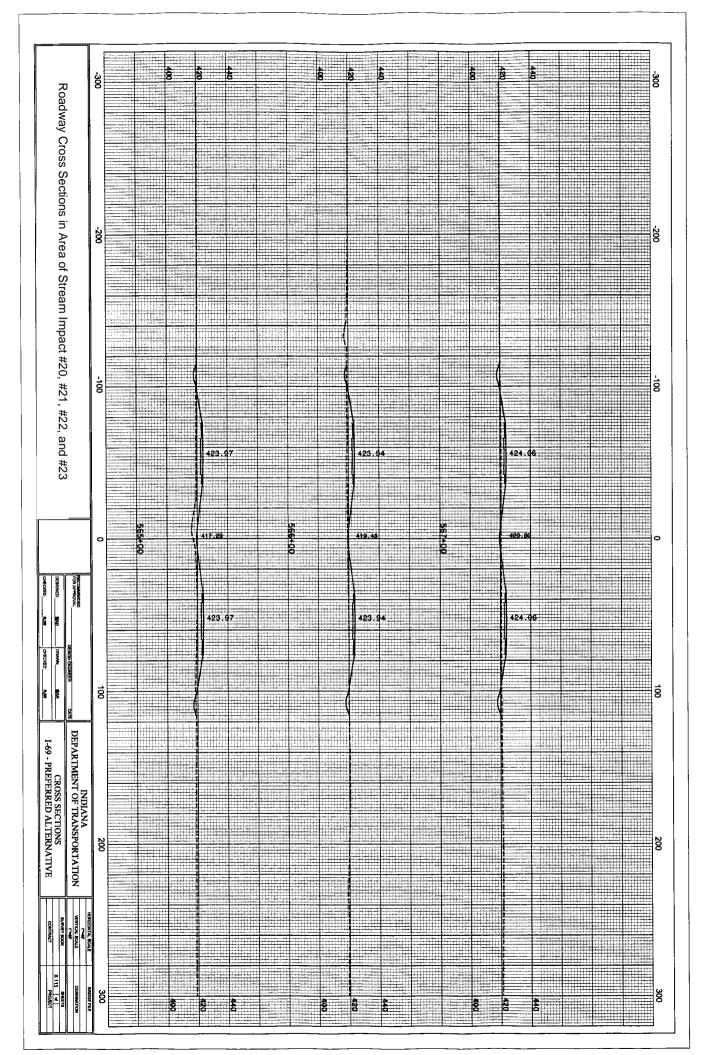


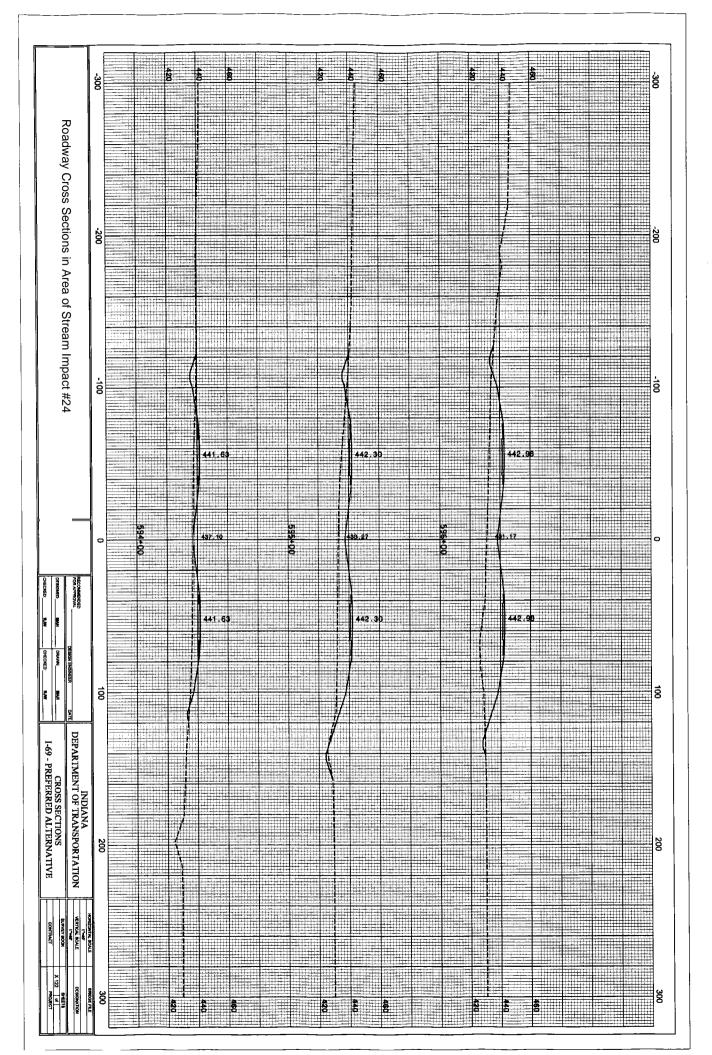


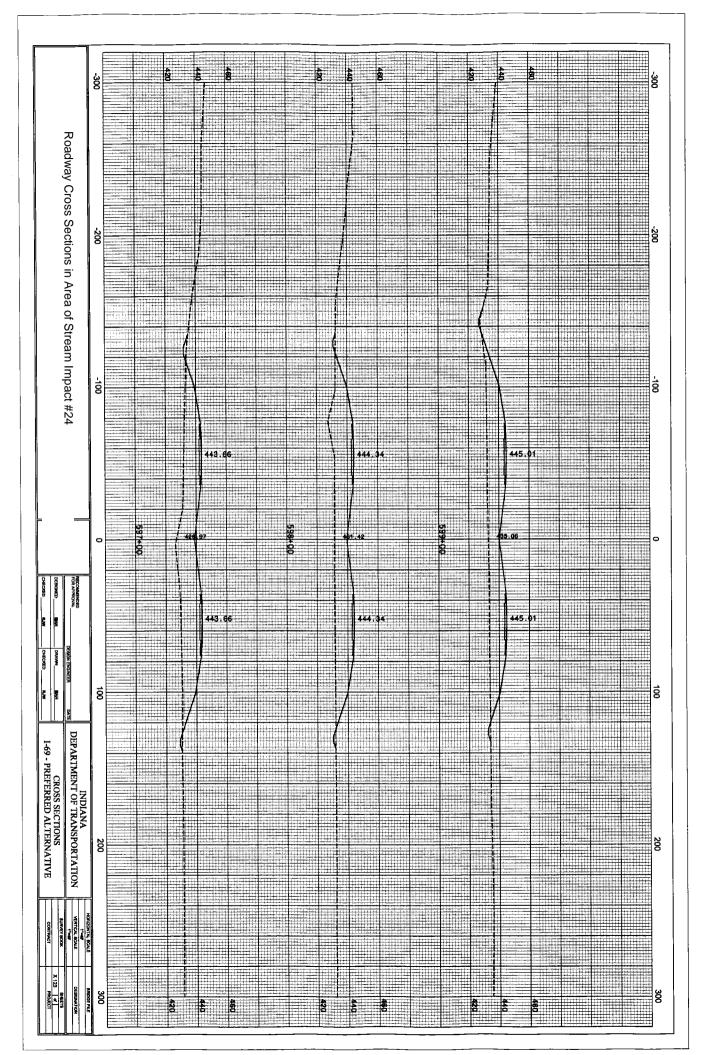


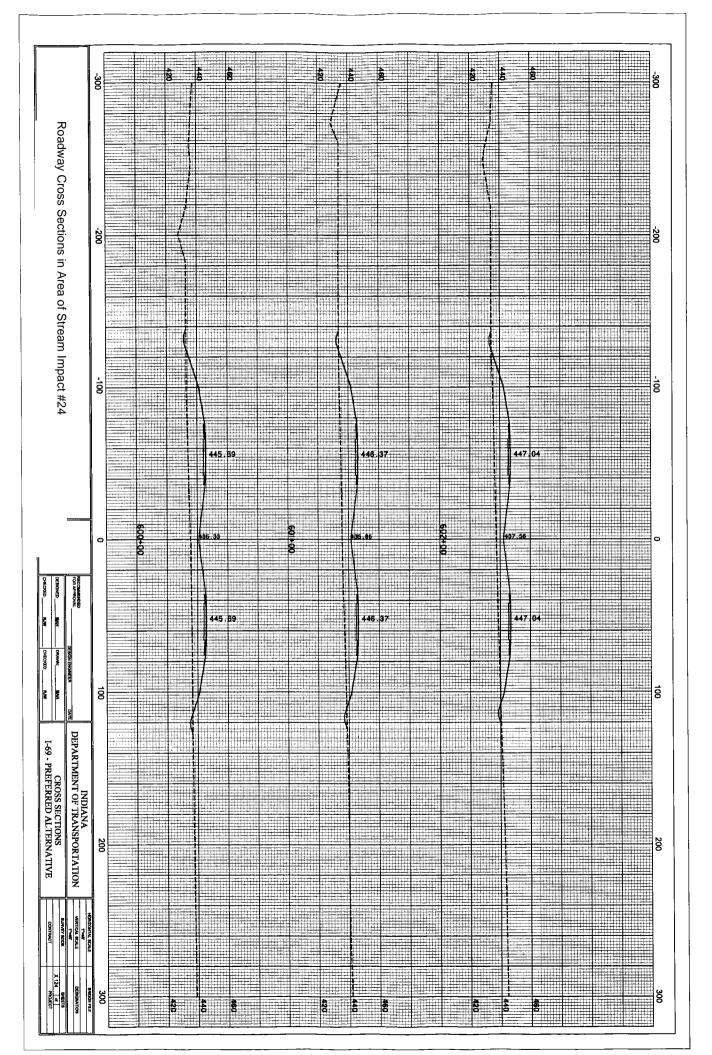


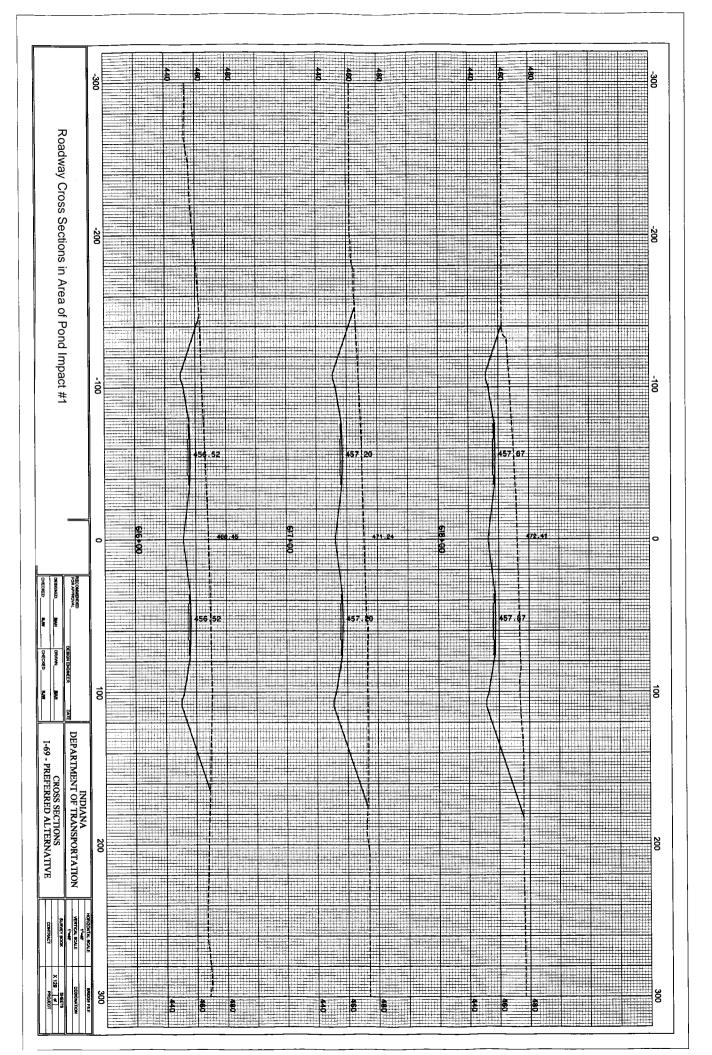


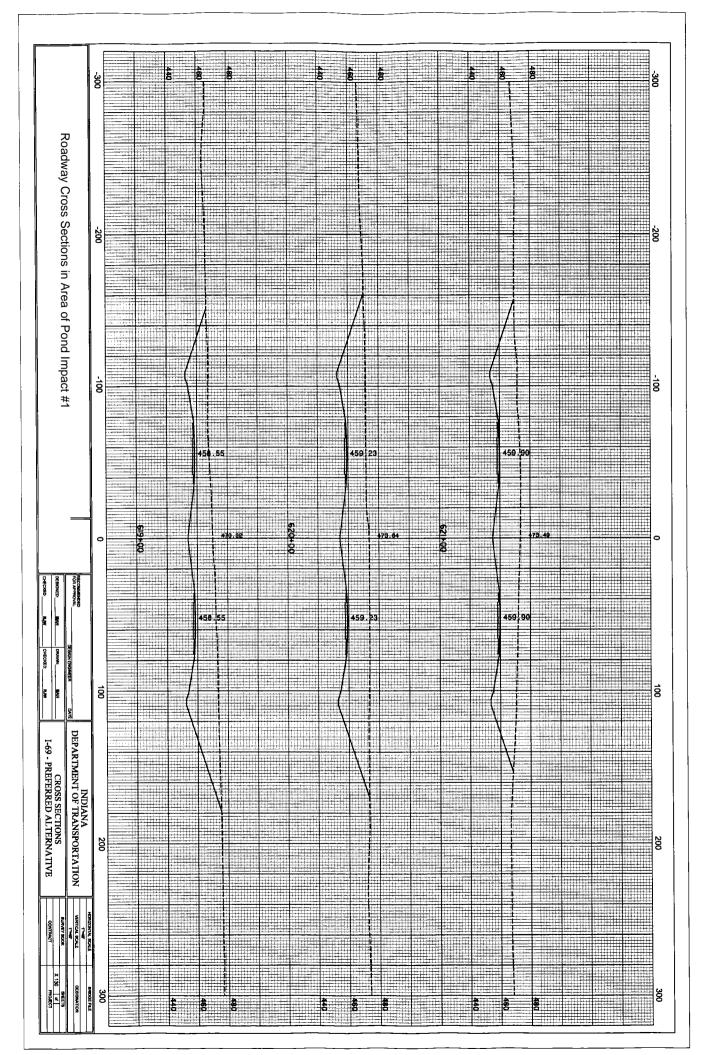


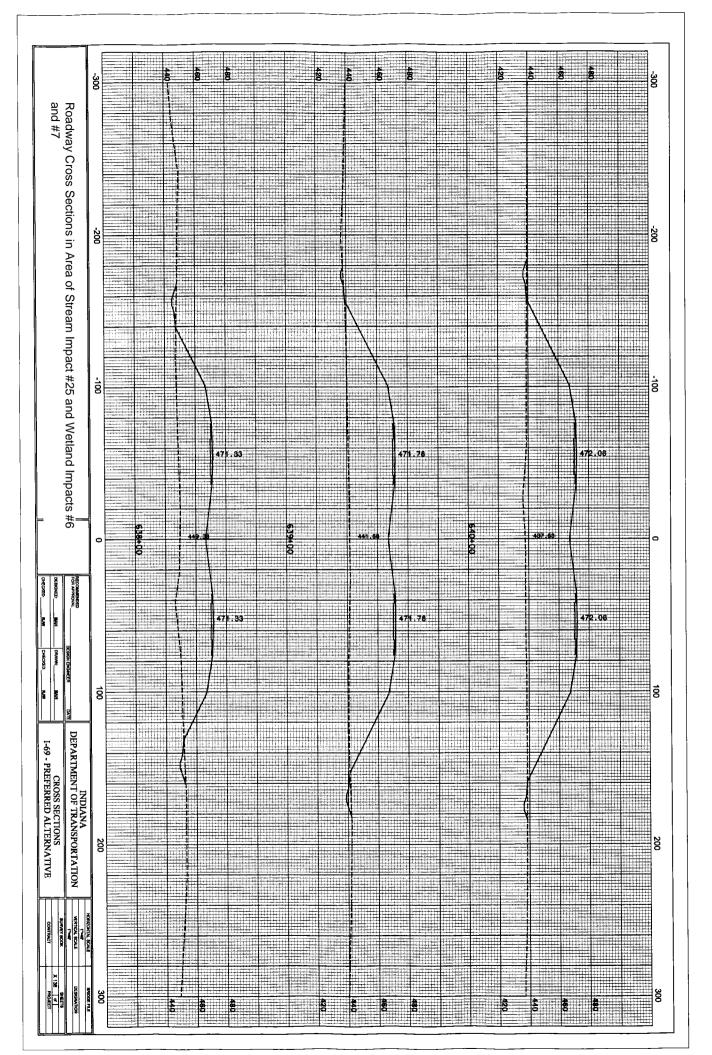


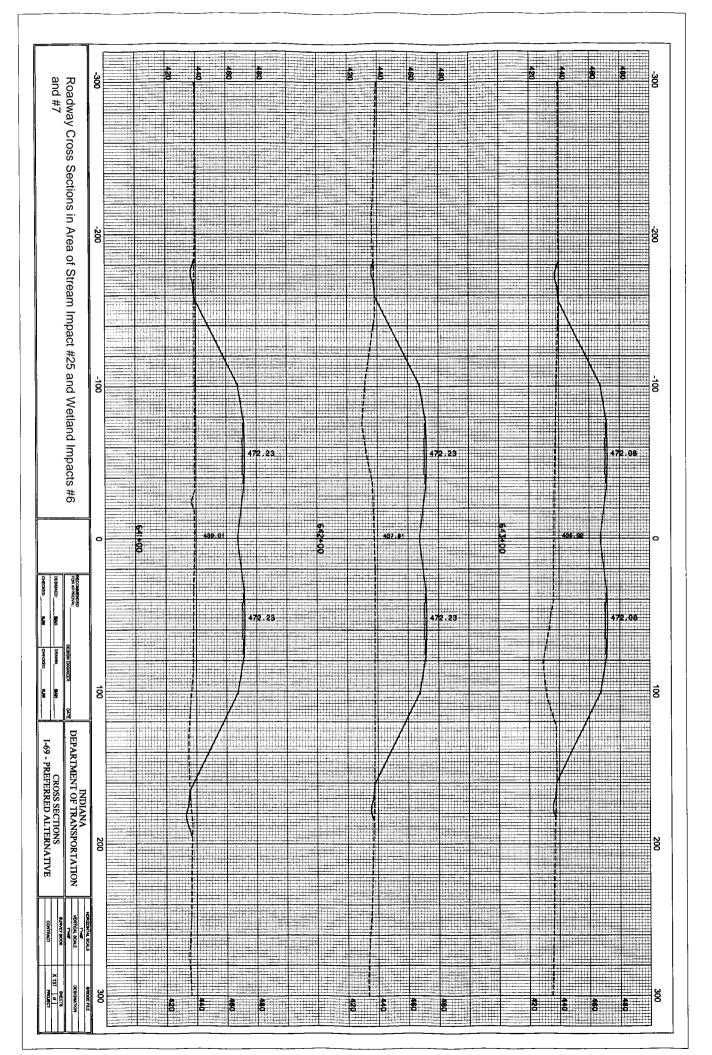


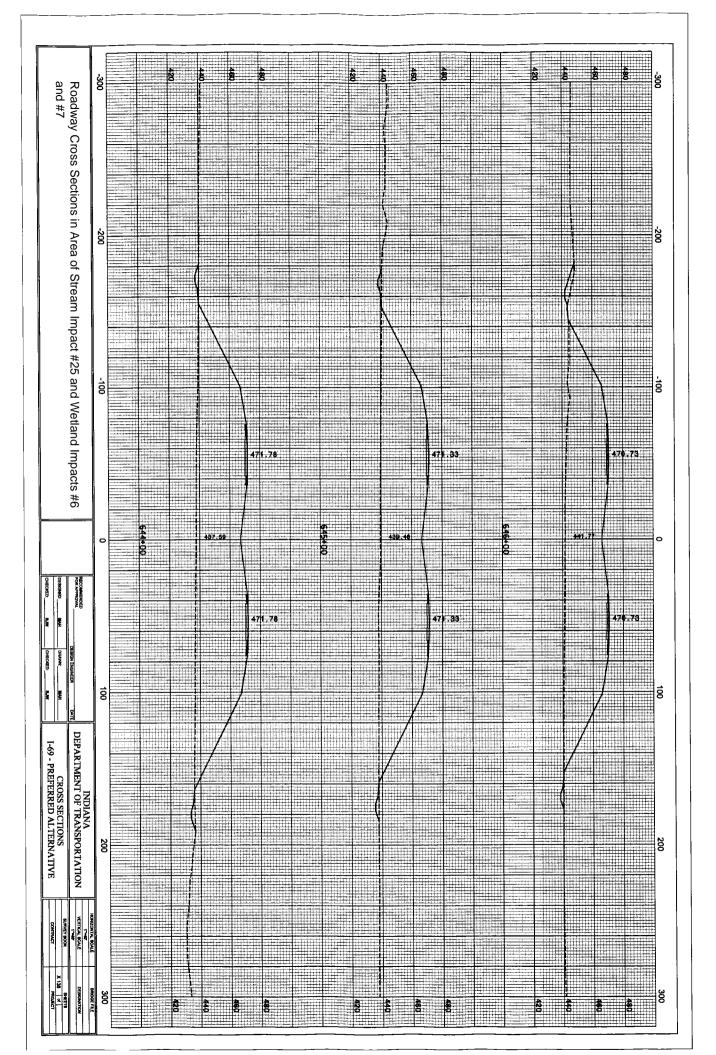


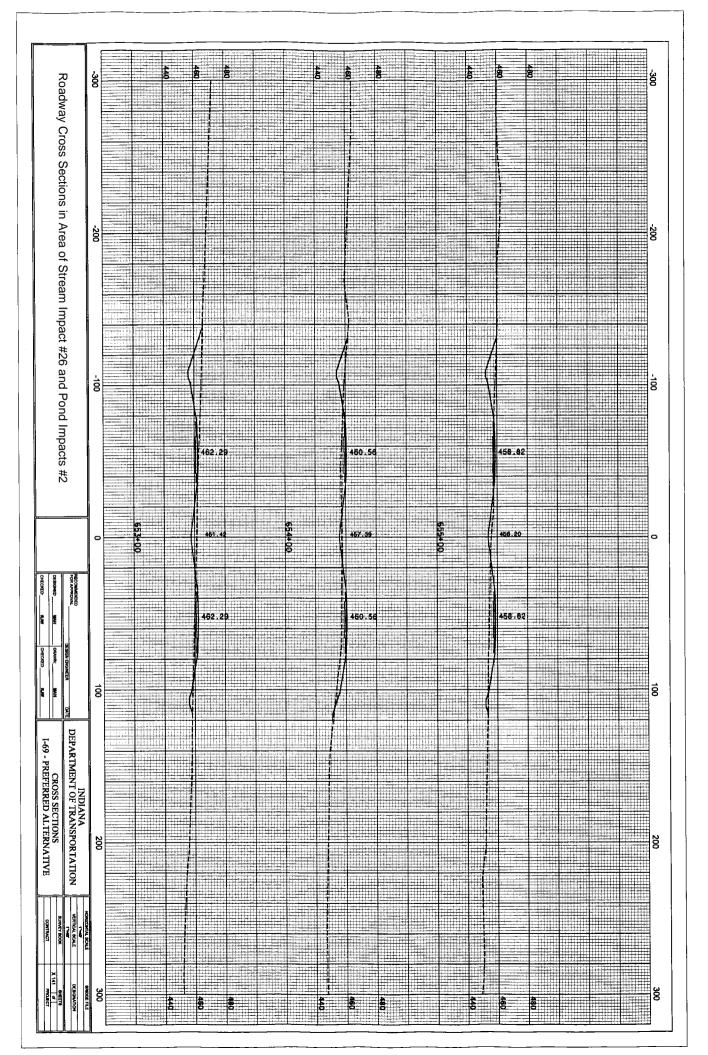


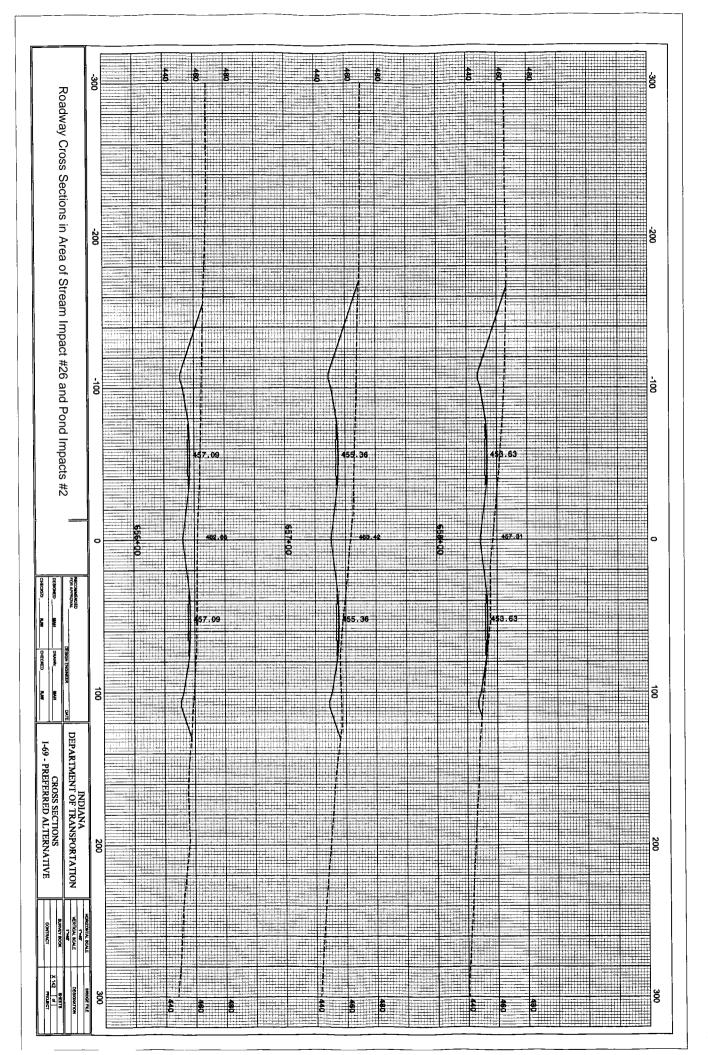


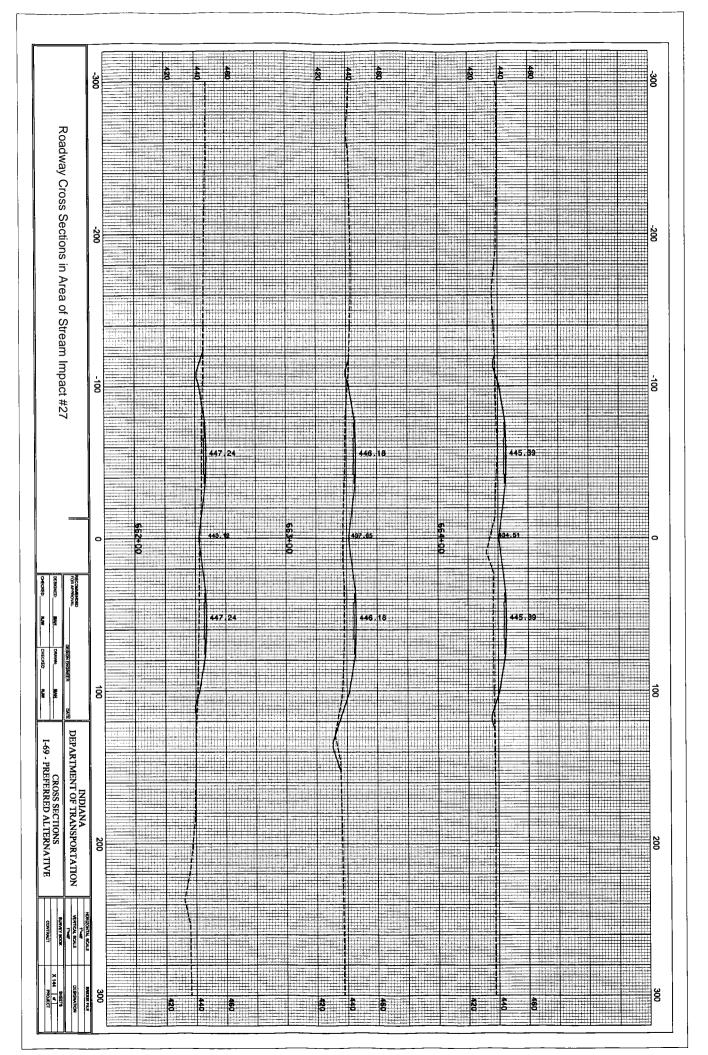


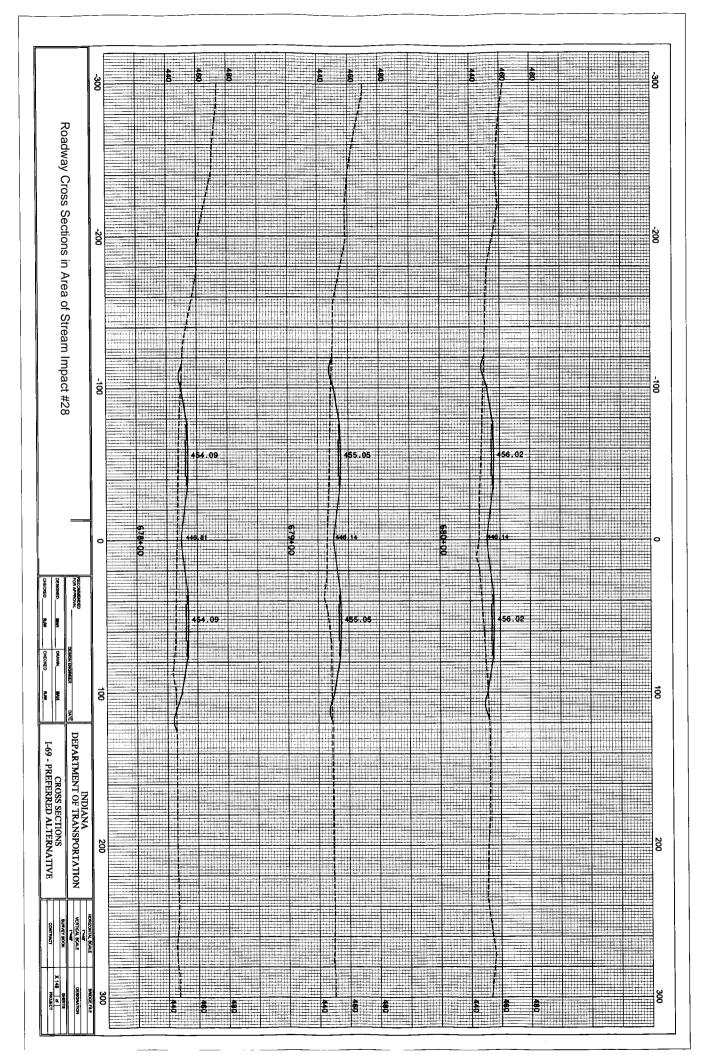


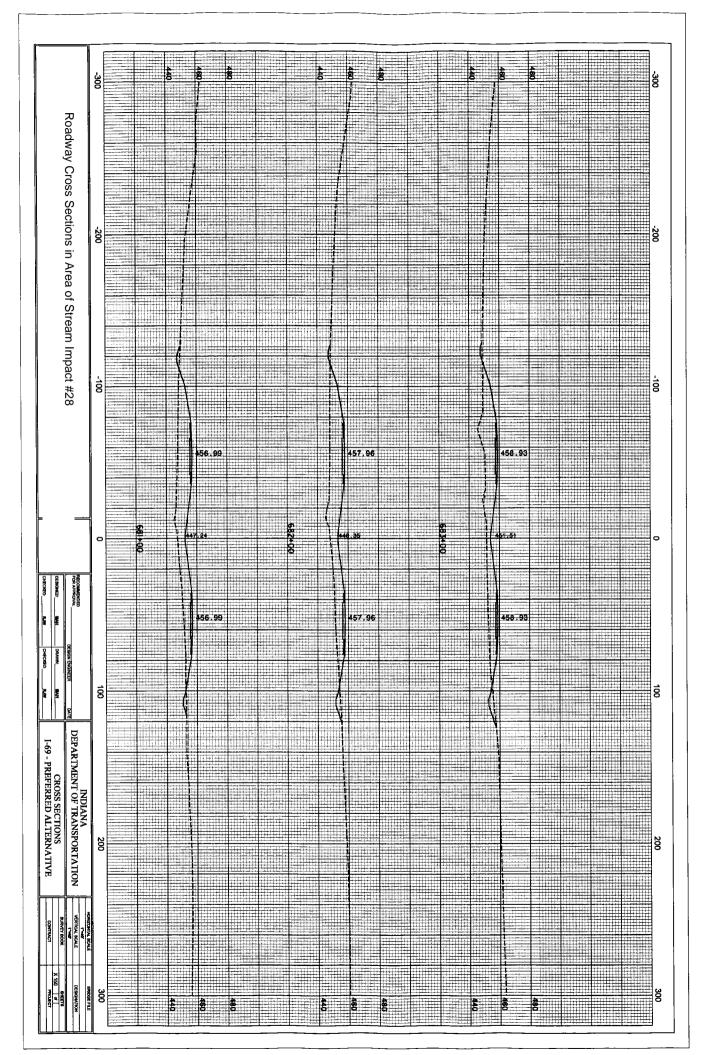


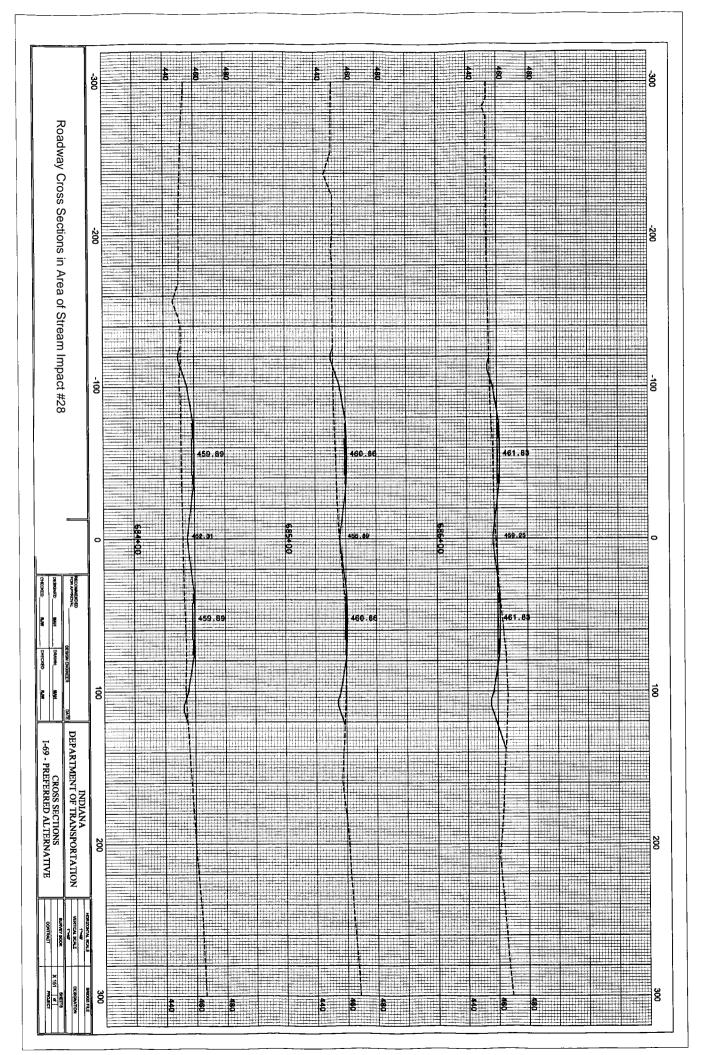


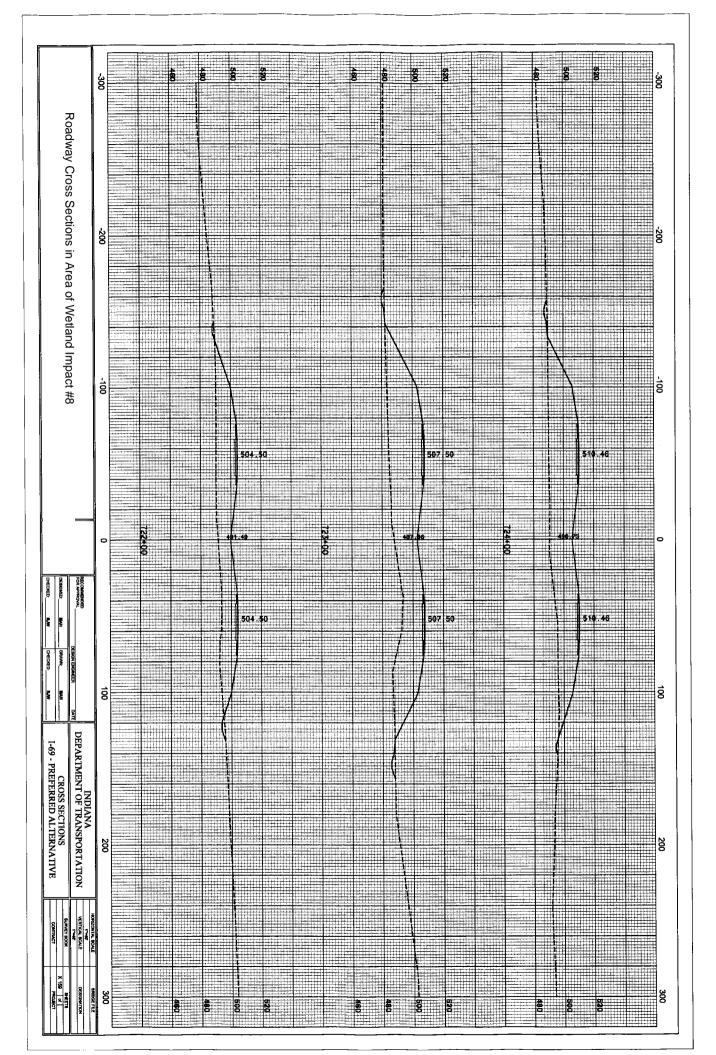


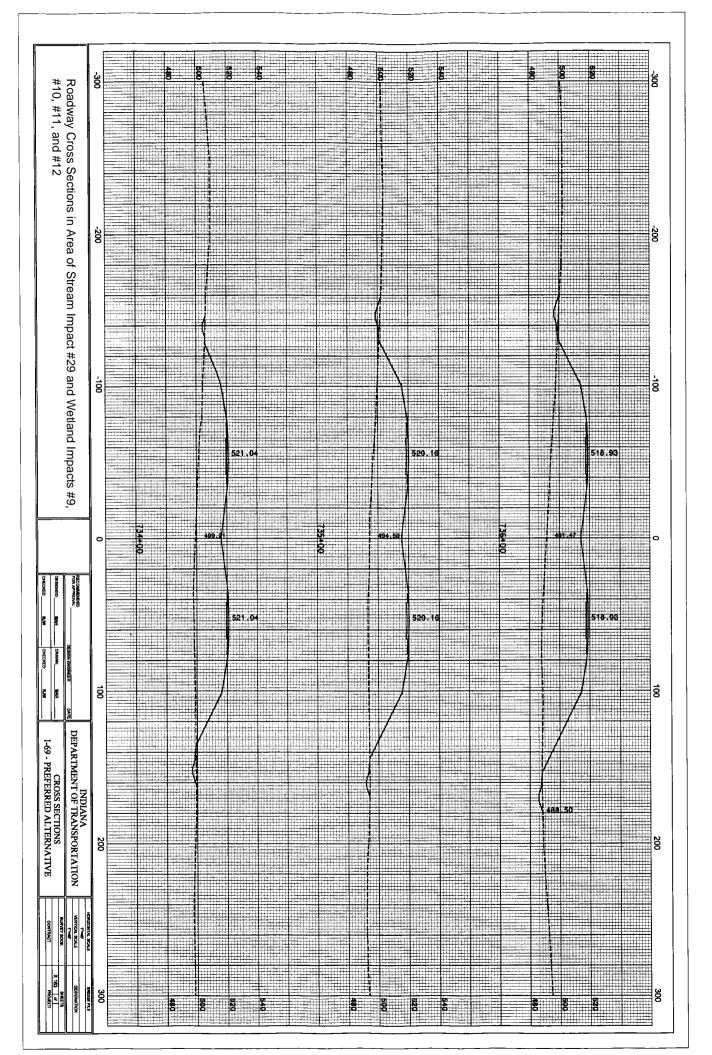


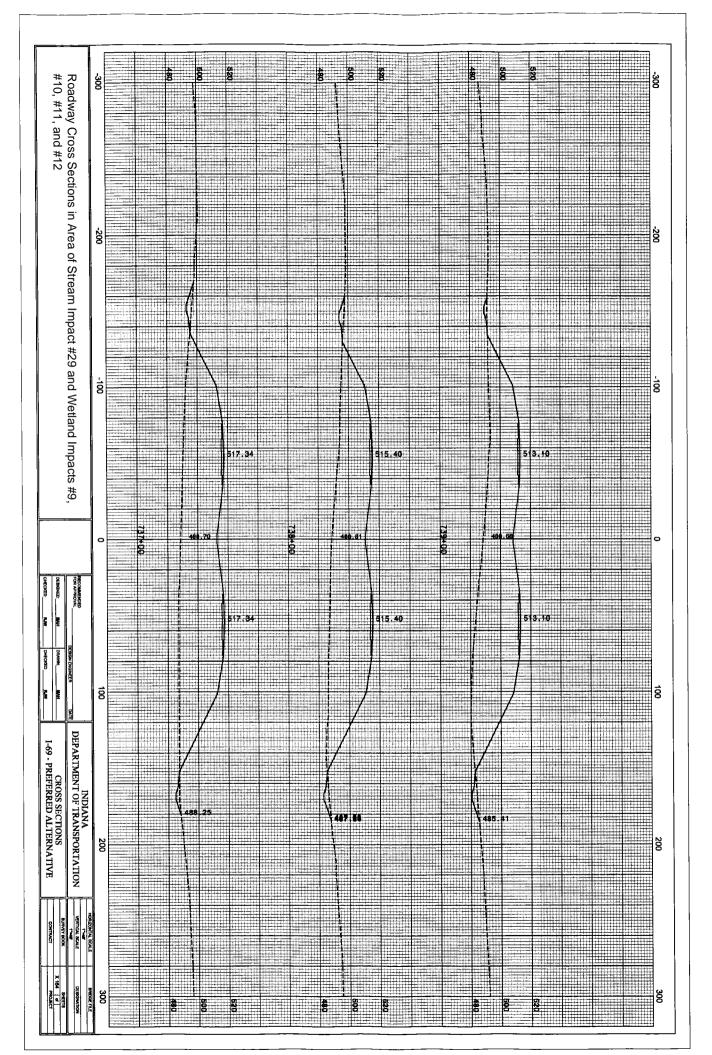


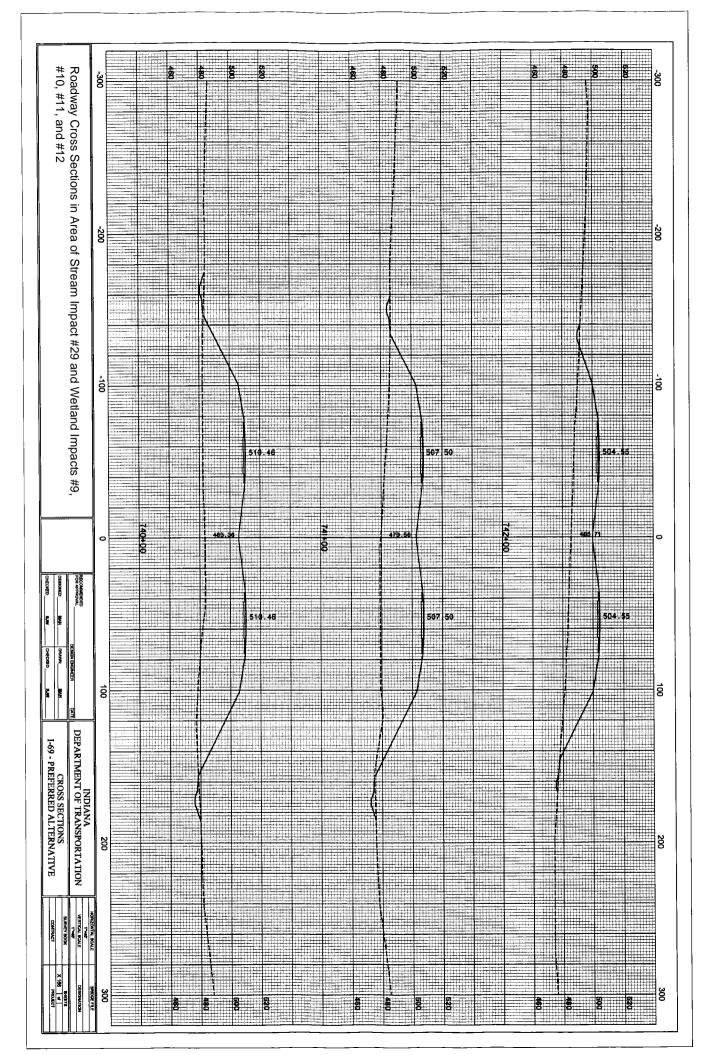


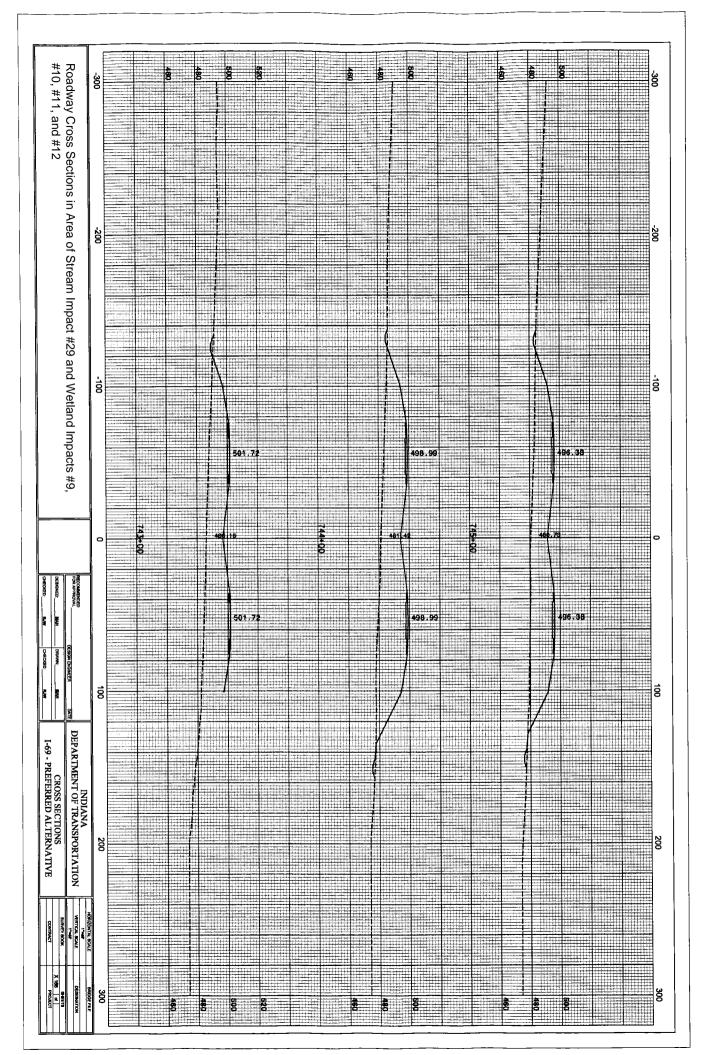


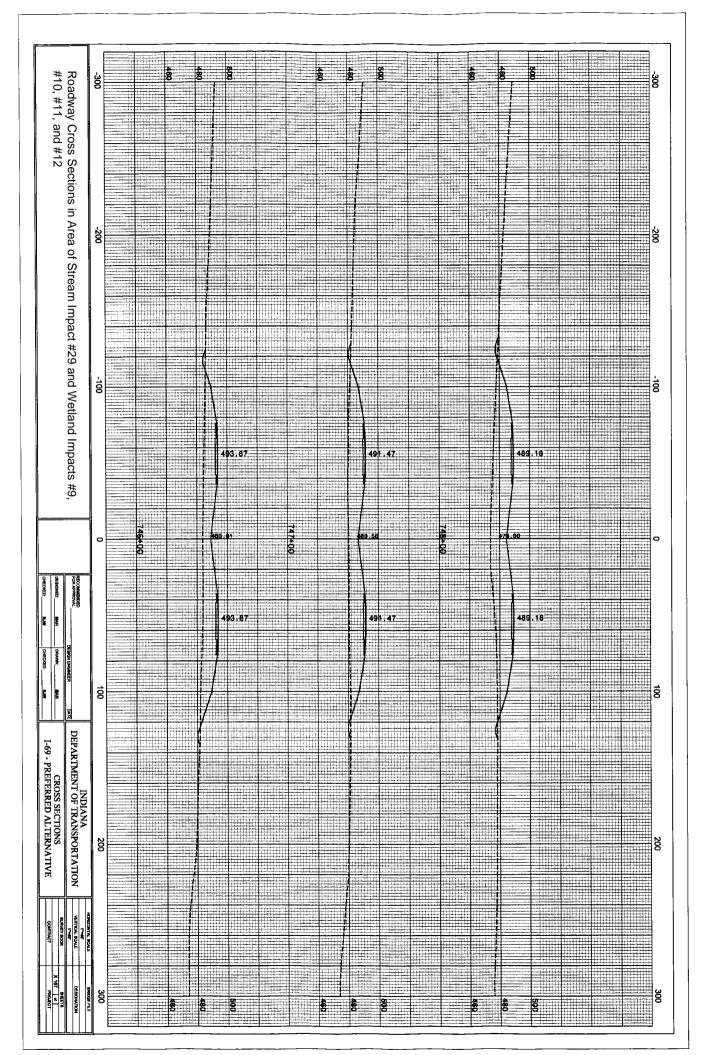


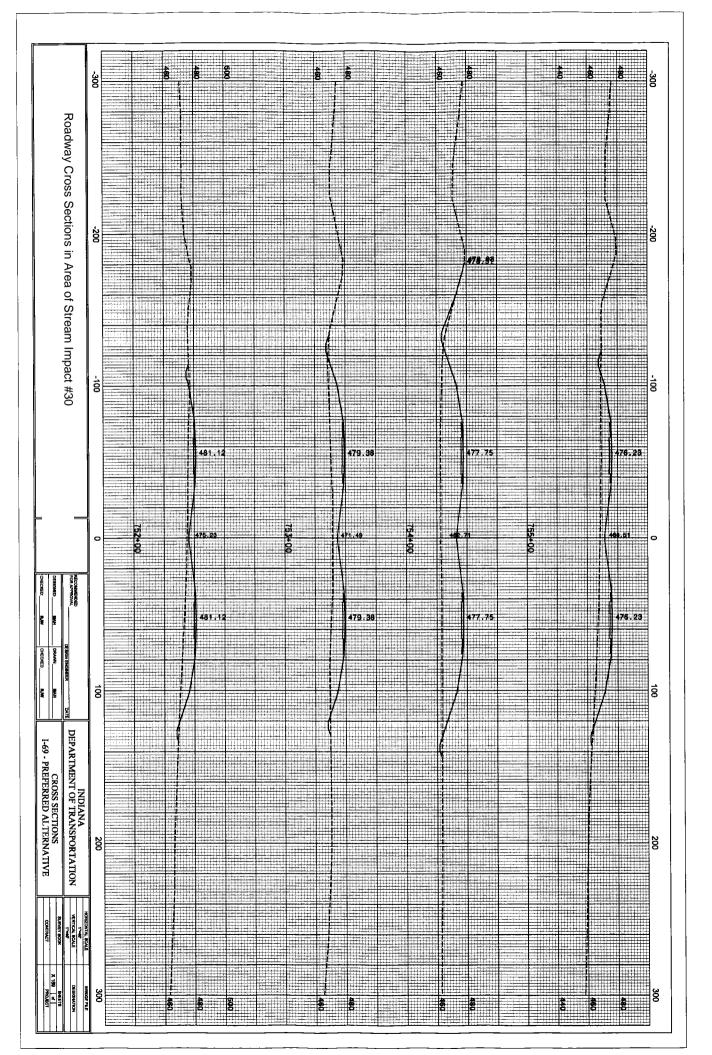


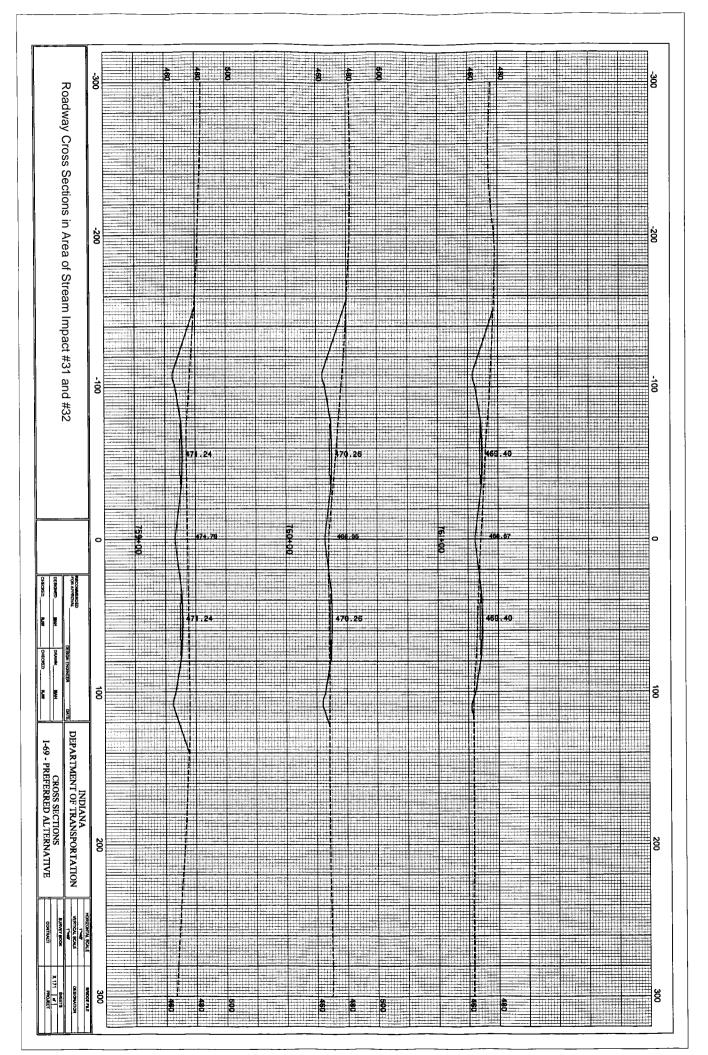


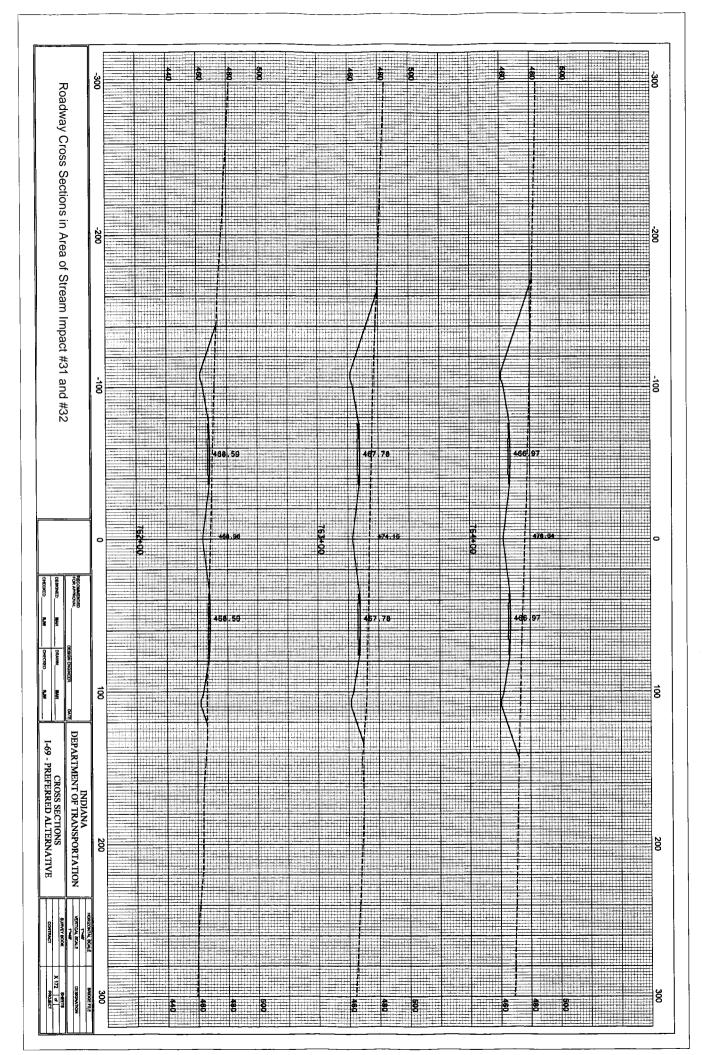


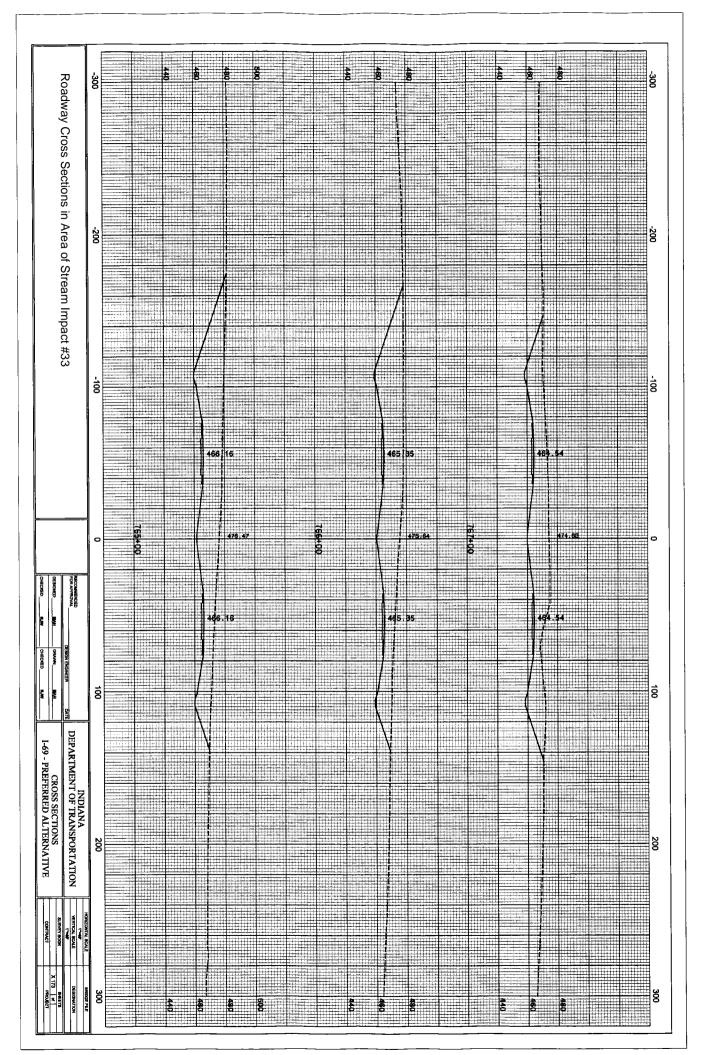


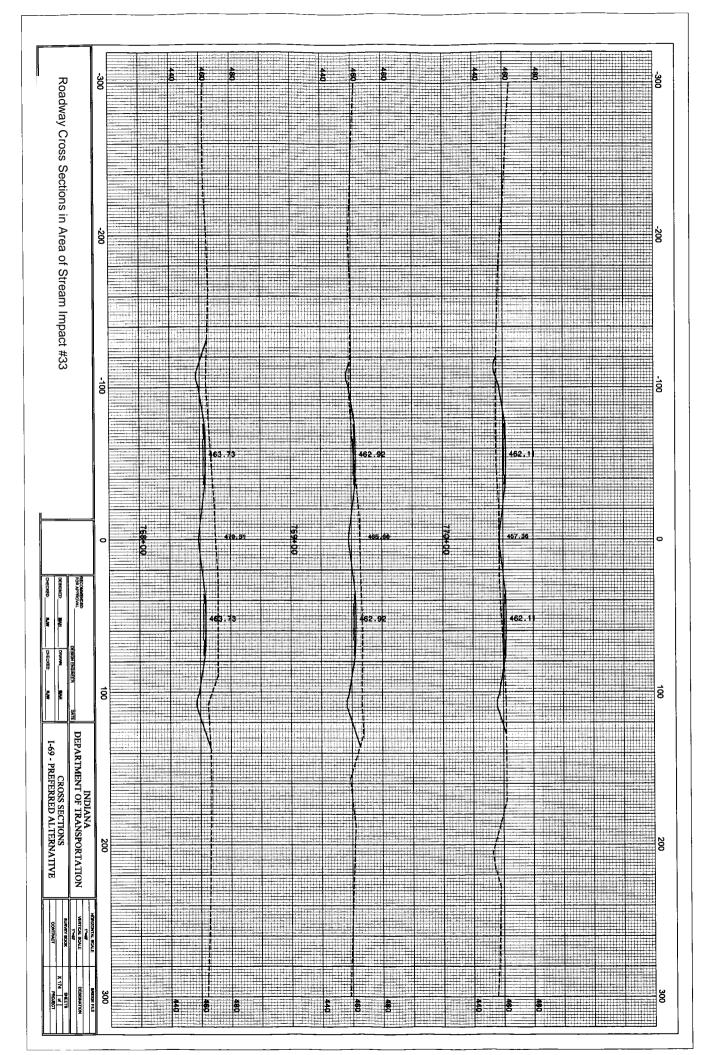


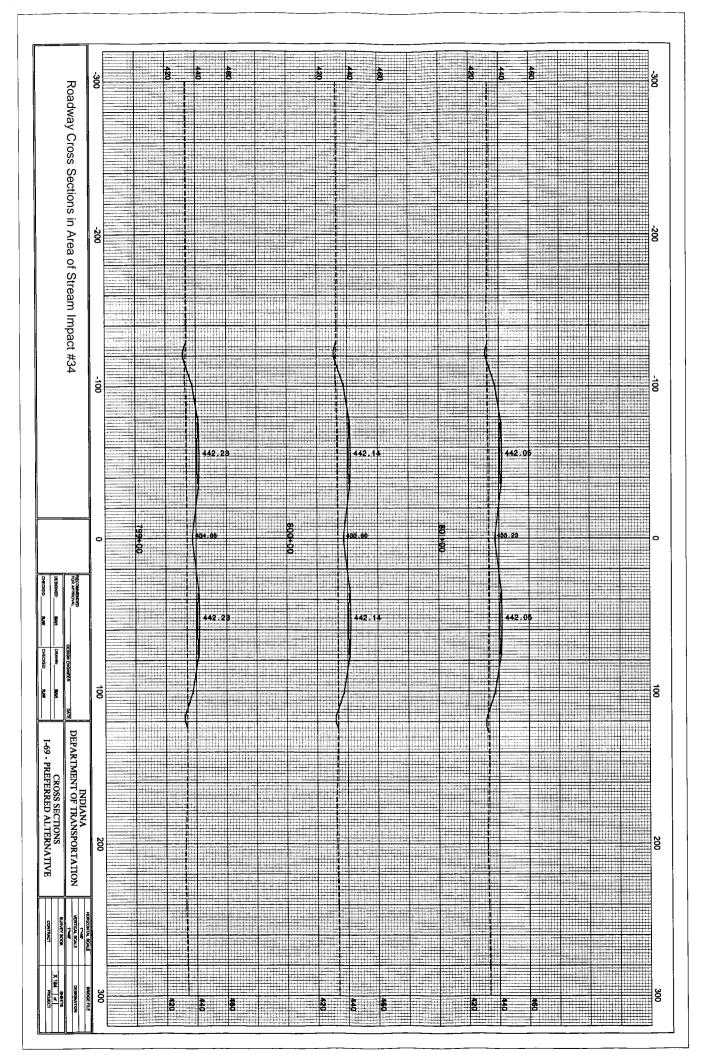


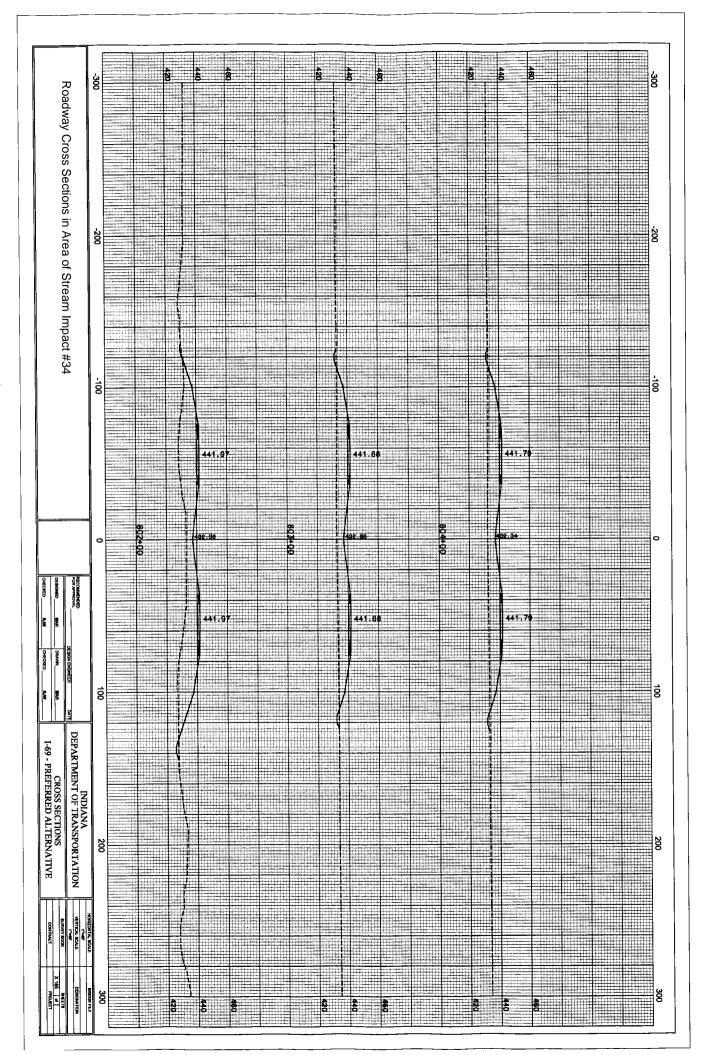


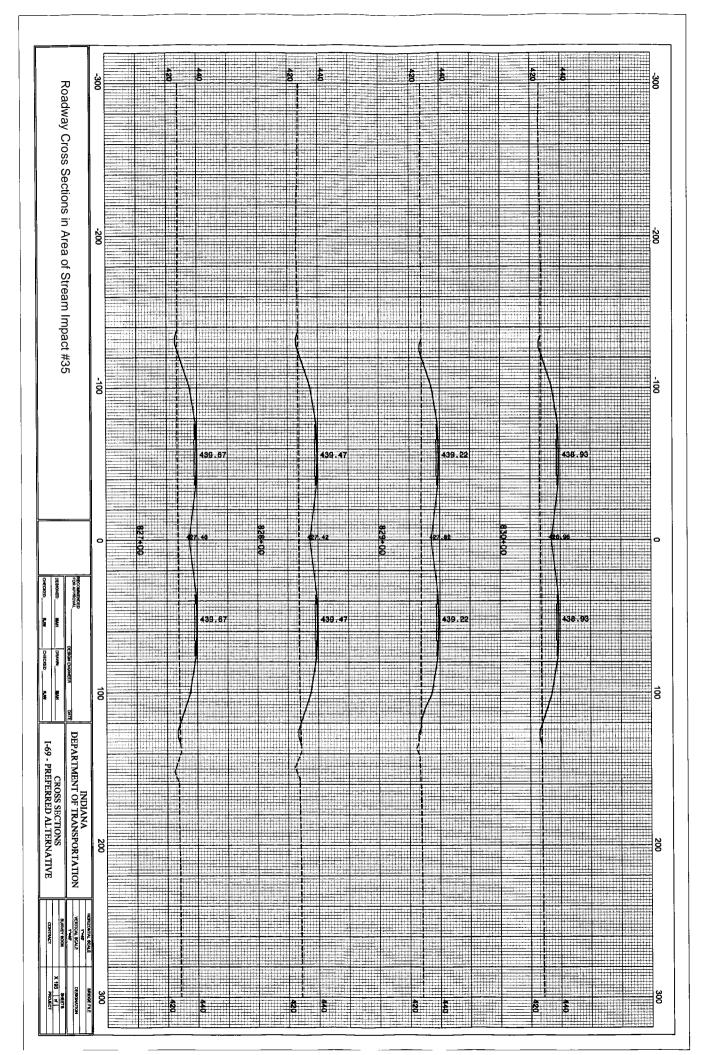




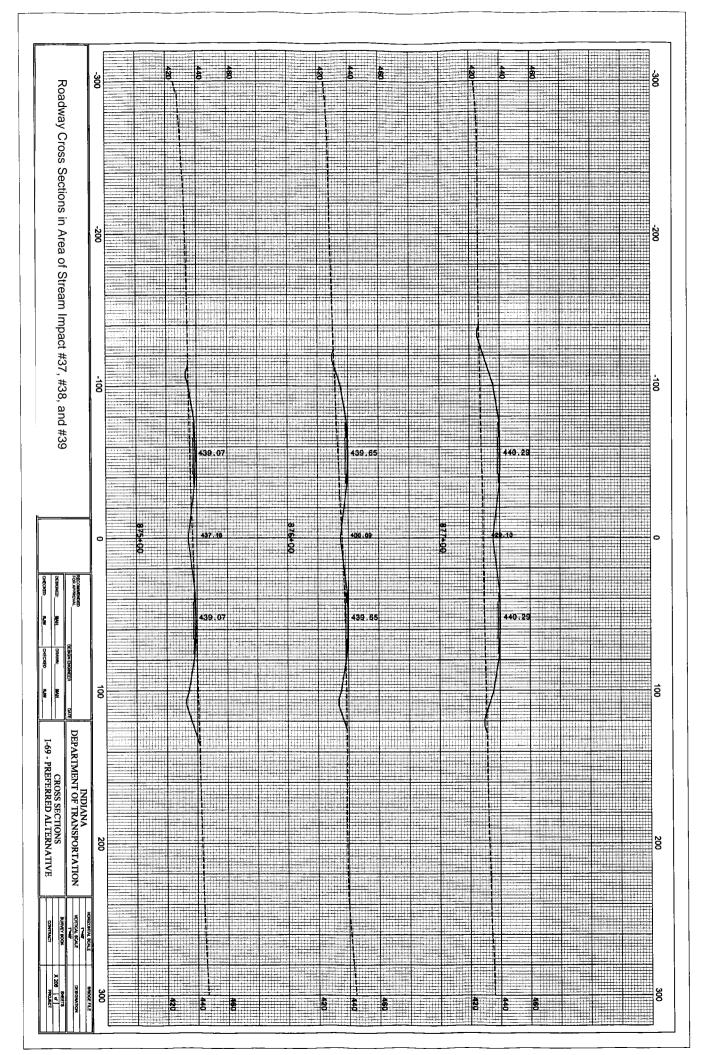


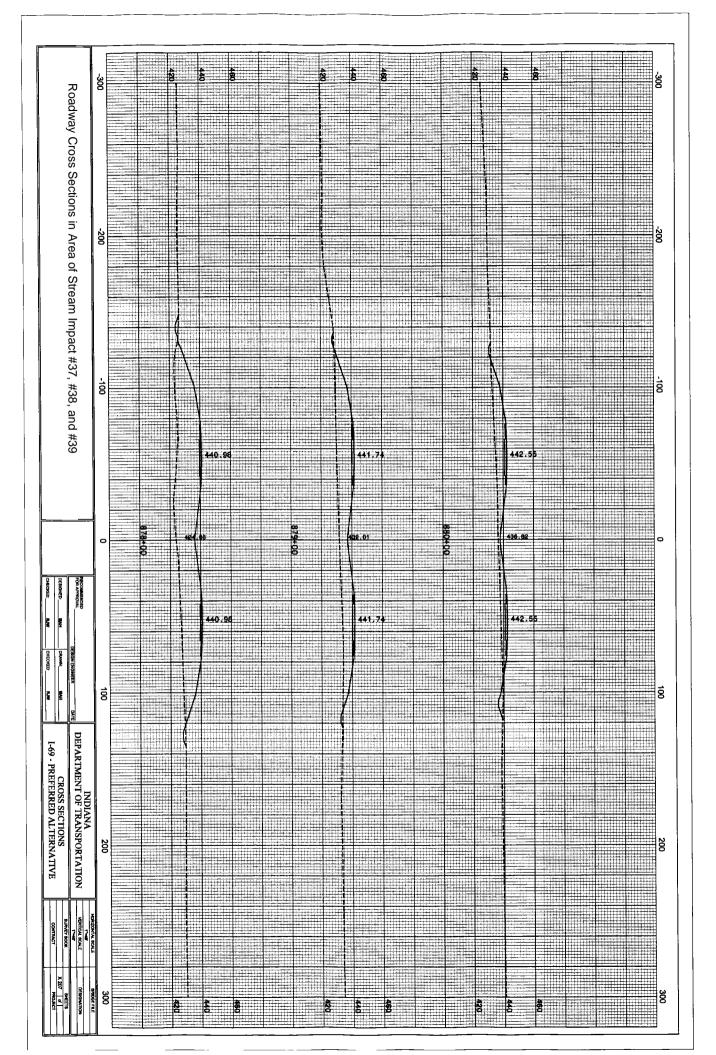


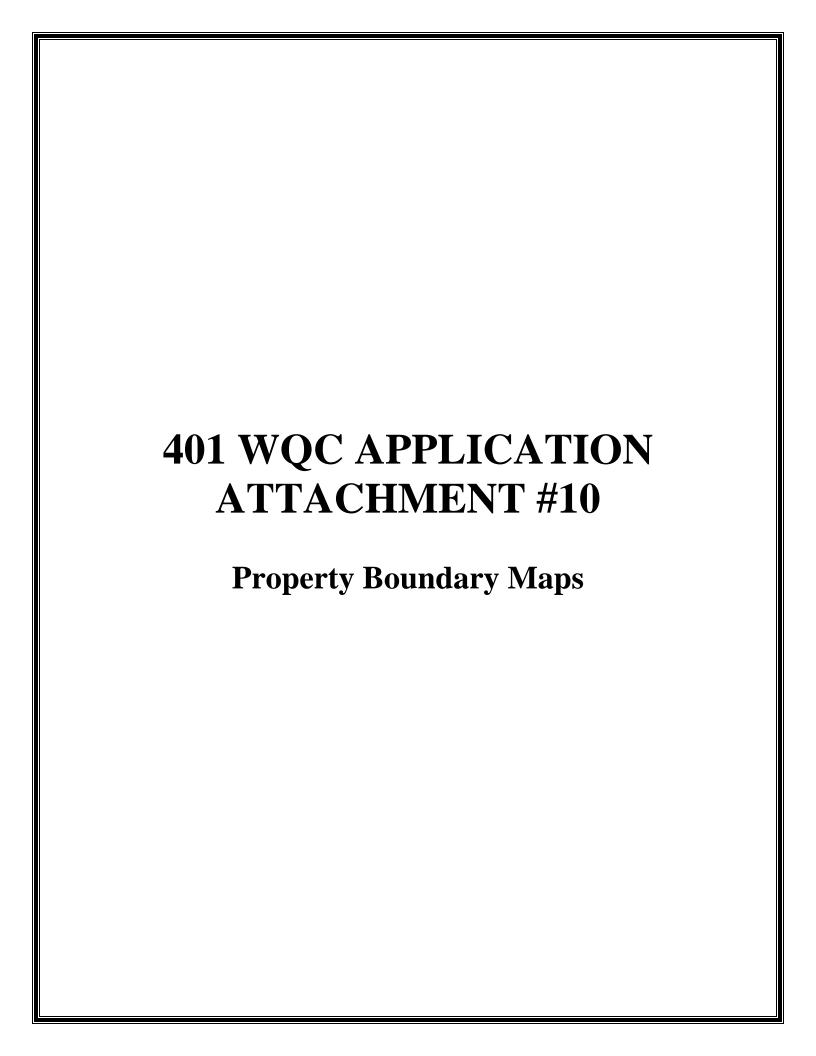


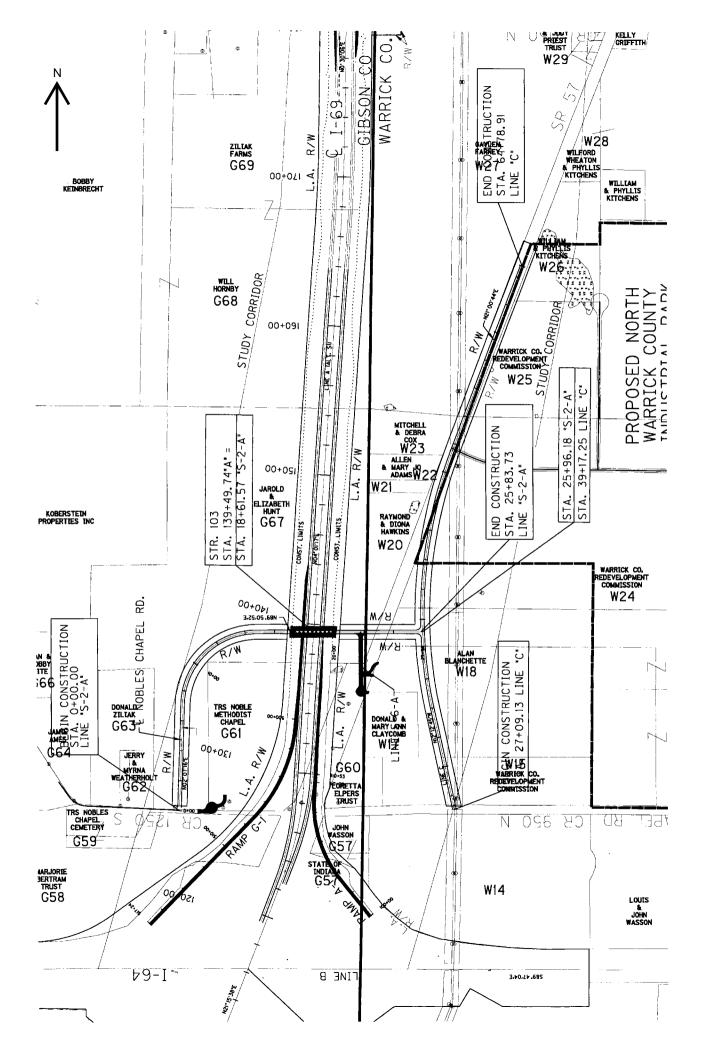


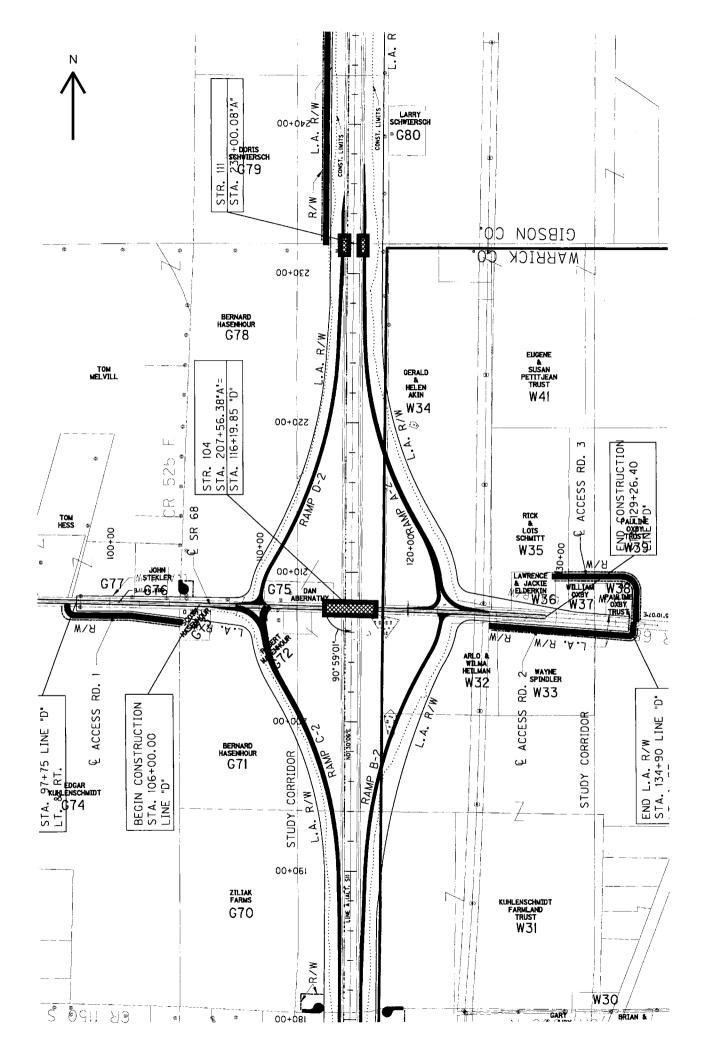
Ros		-300			ŧ		Š	2					ģ	ŧ.		-300
adway Cr																
Roadway Cross Sections in Area of Stream Impact #36																
		-200														200
		-100														-100
					99,26		42	9.72			. 23			J. 85		
							42							// / / / / / / / / / / / / / / / / / /		
		0	ю 3	424	15	© ©	420.	22	8.49*	423.0	è	850+	424	36		0
CEMPORED	RECOMMENDED FOR APPROVAL		5			8			Ž.			à				
ED HAME	HENDED			1	30.26		42	9.72		429	.23		421	3.85		
DRAWA	DESIGN INGINEER						ij									
<u>\$</u>	PA .	100														8
1 60 00 1	DEPARTM															
CROSS SECTIONS	INDIANA DEPARTMENT OF TRANSPORTATION	200														
TEBNATT																200
																H
BURVEY BOOK	HORIZONTAL BOALE VERTICAL BOALE 17-48															
X 198 of PROJECT	NOLVWOISED THE SECTION	300					a a			i i			42			300
피그래	NON PLE			Æ	8		Ö	\$		8	8		2	\$		+1

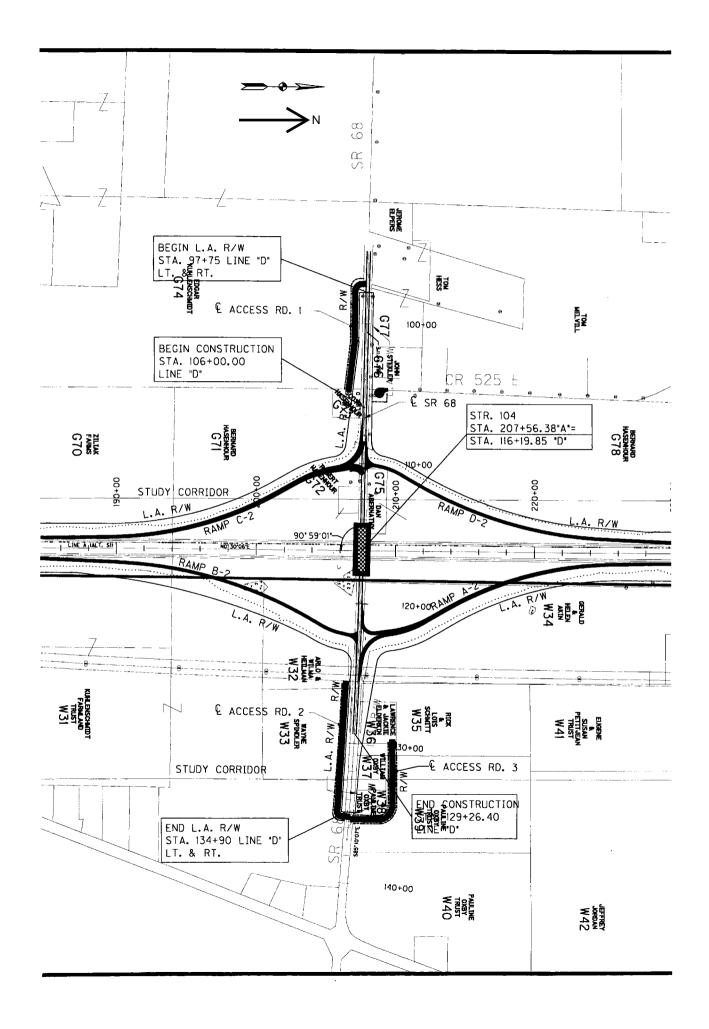


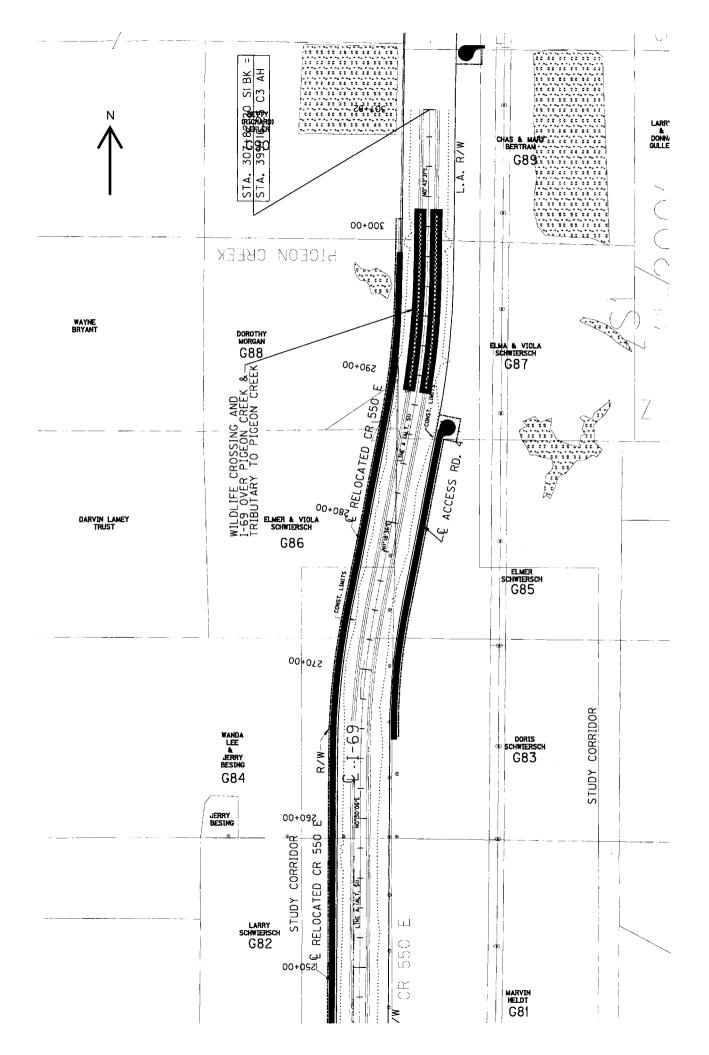


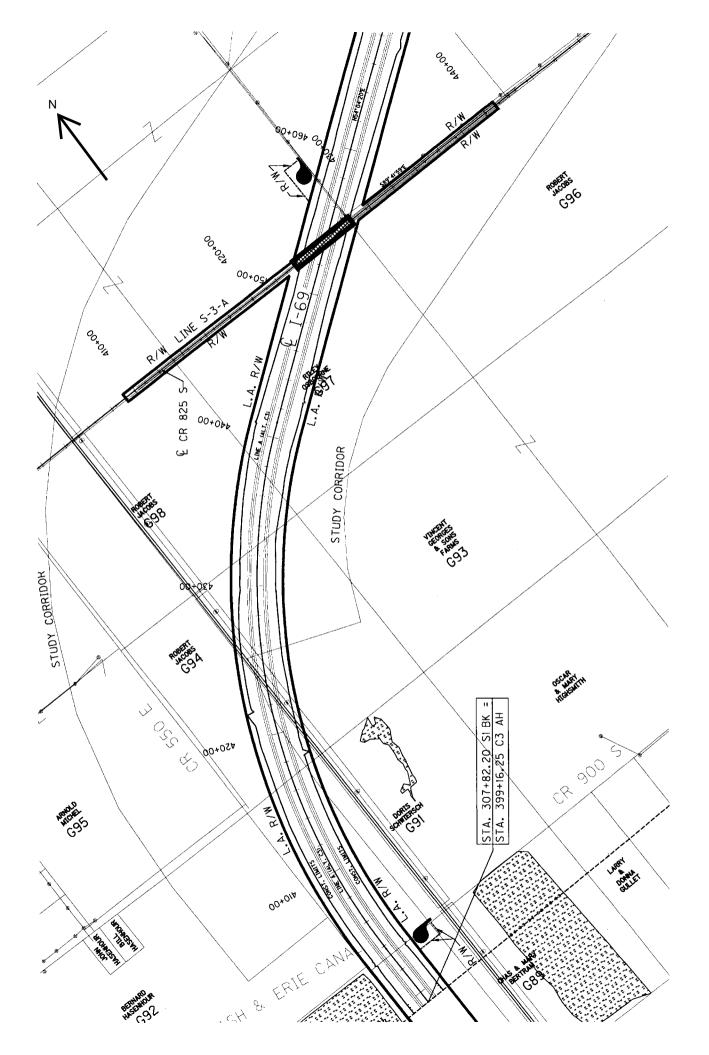


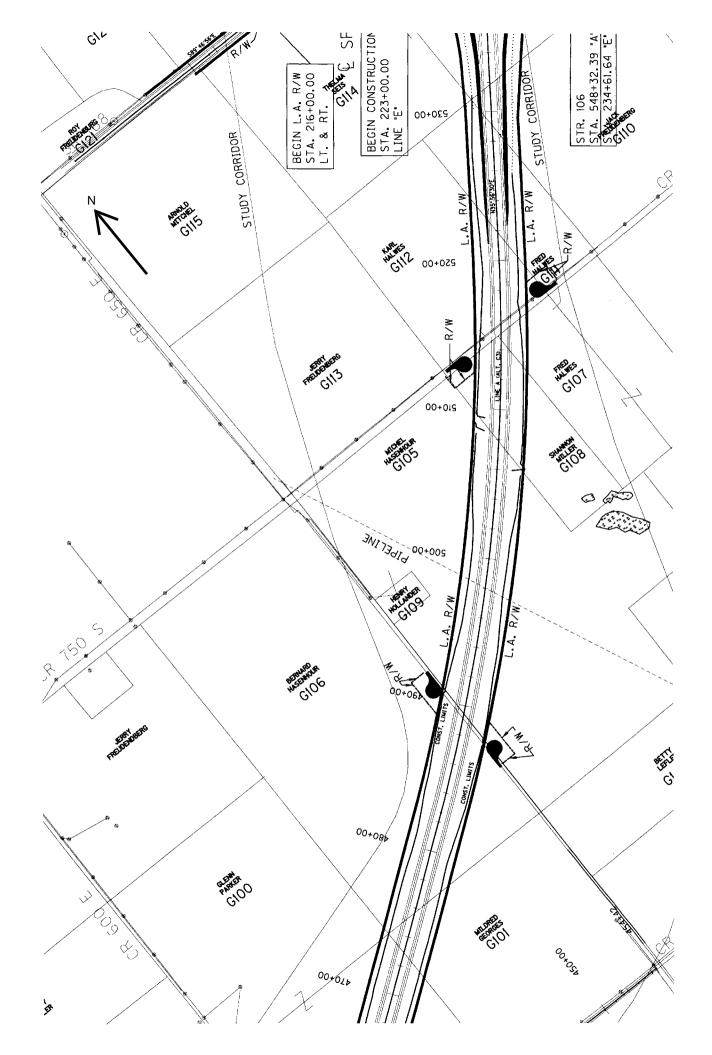


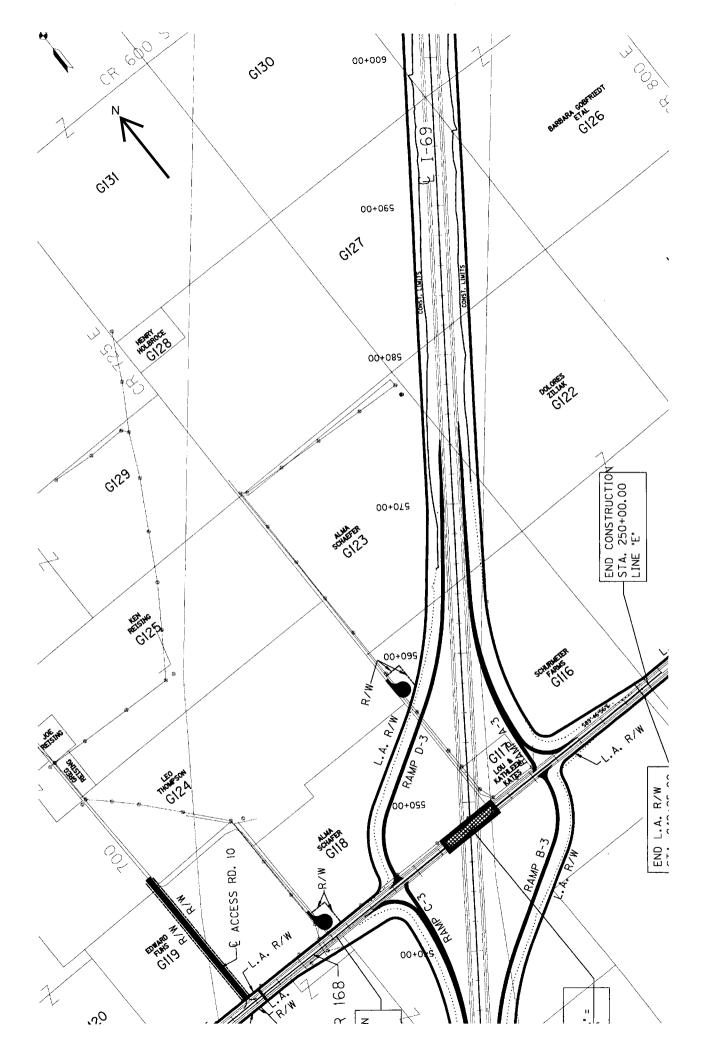


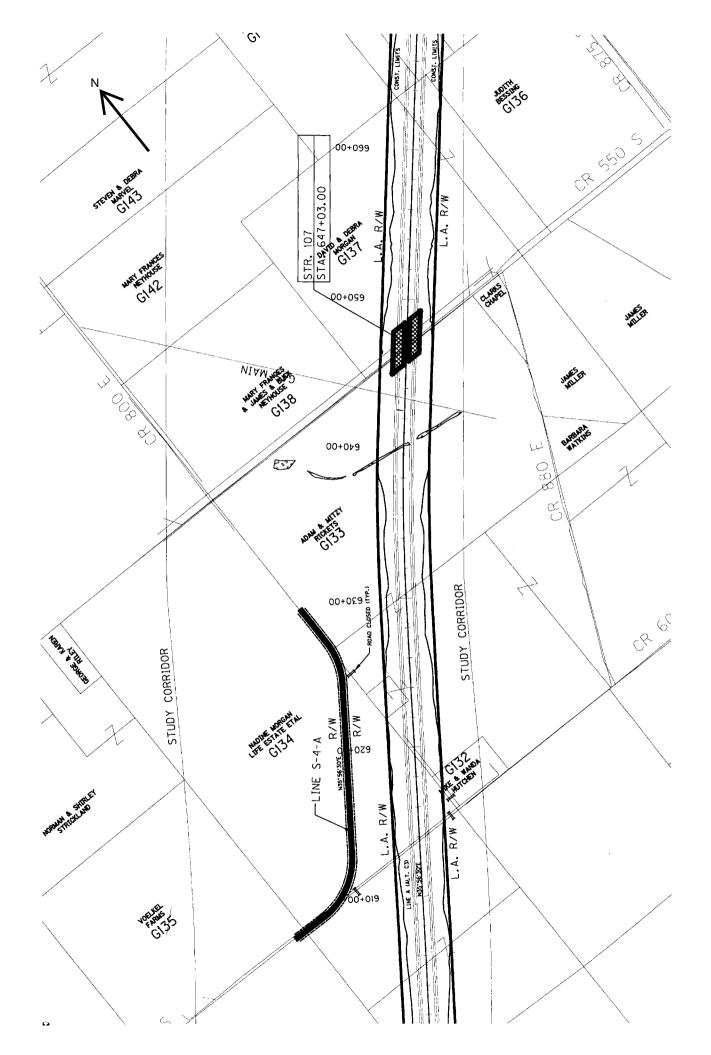


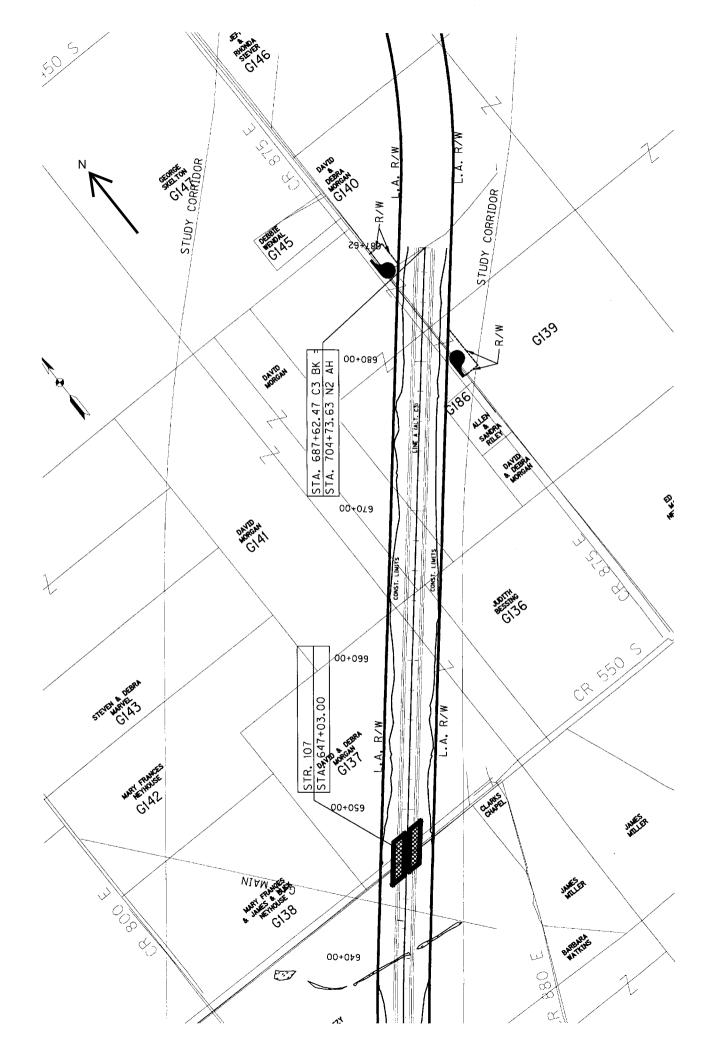


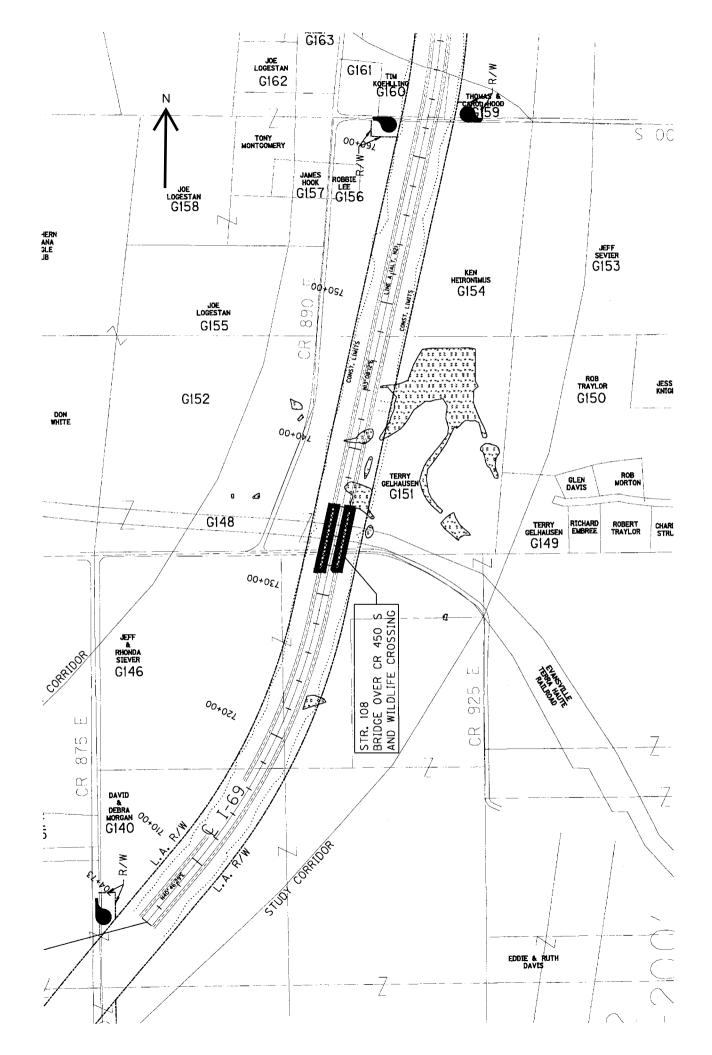


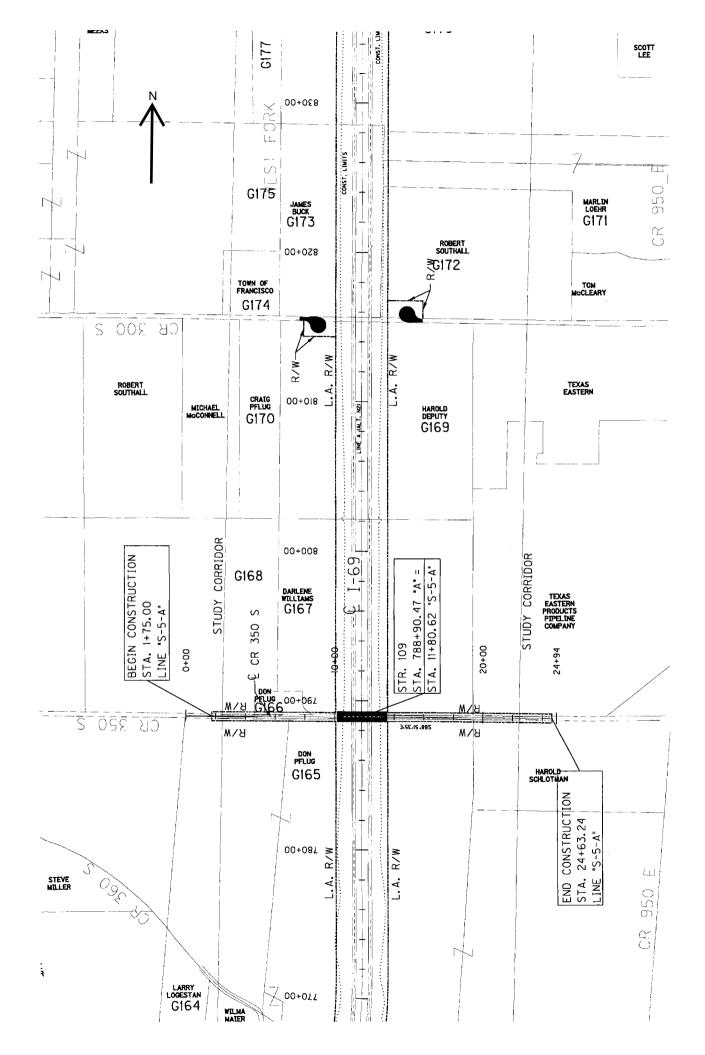


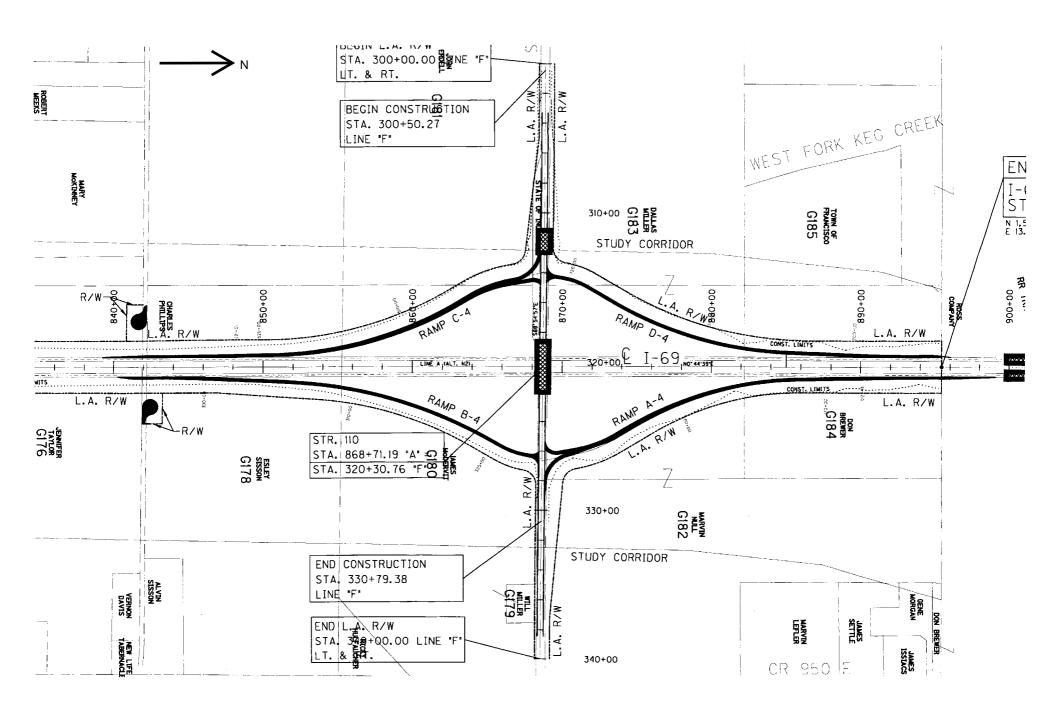




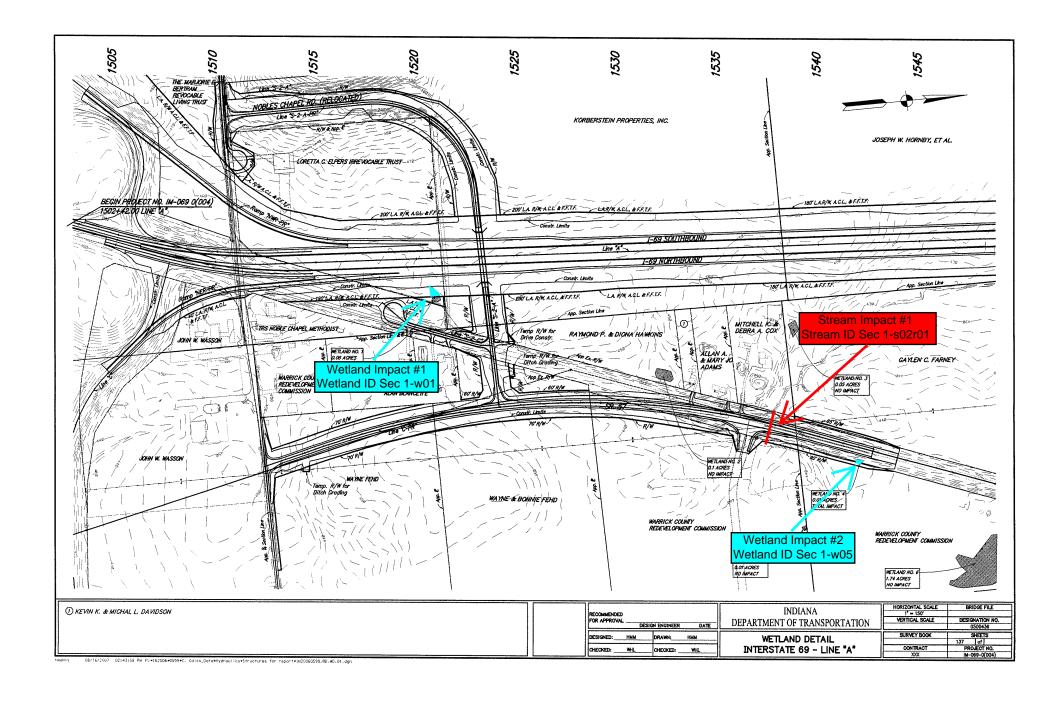


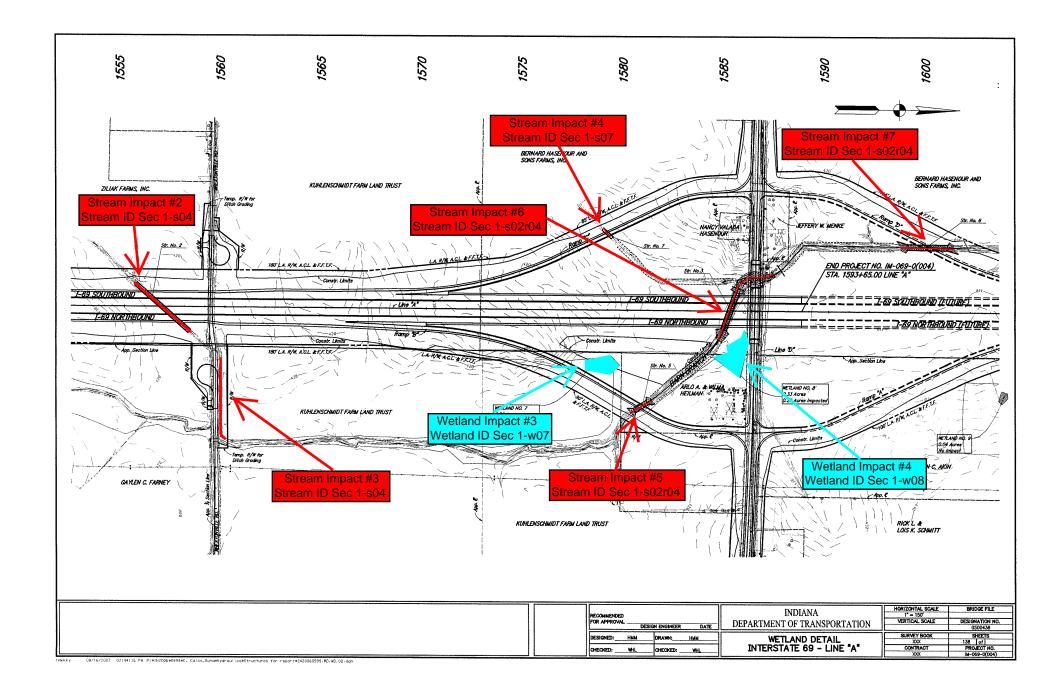


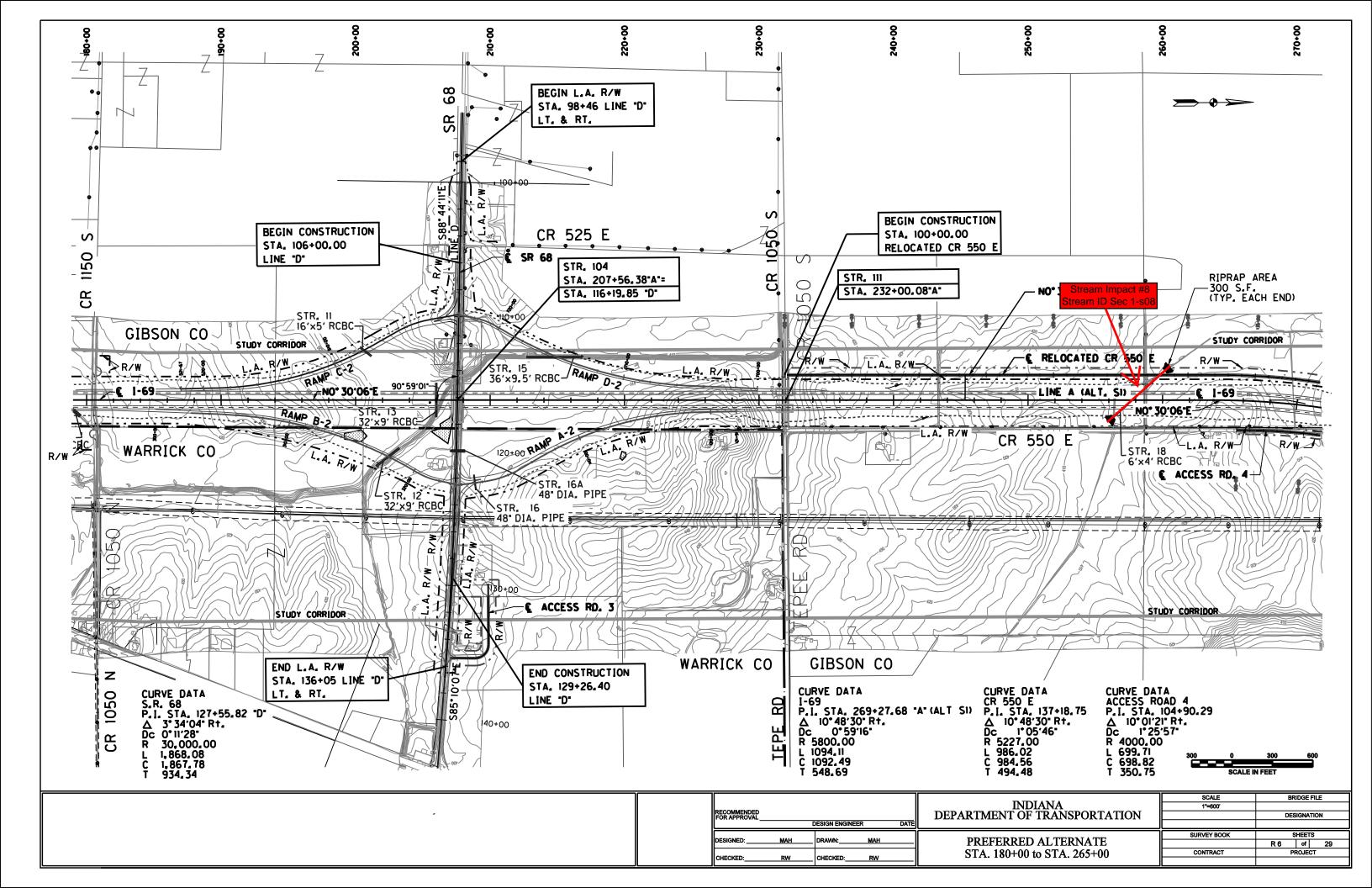


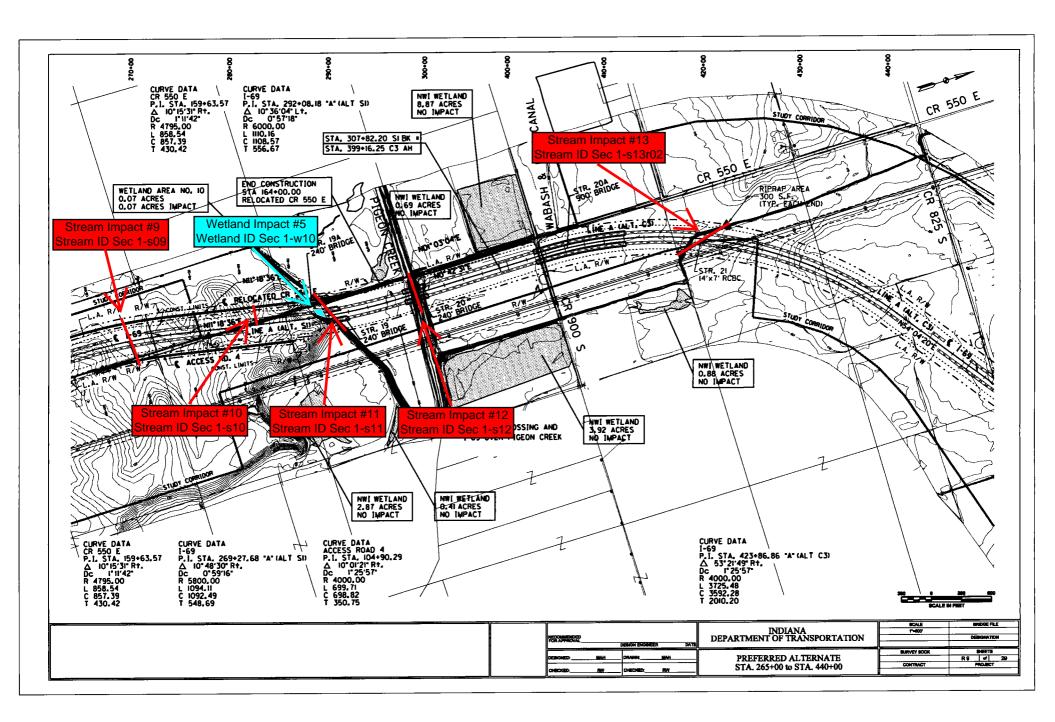


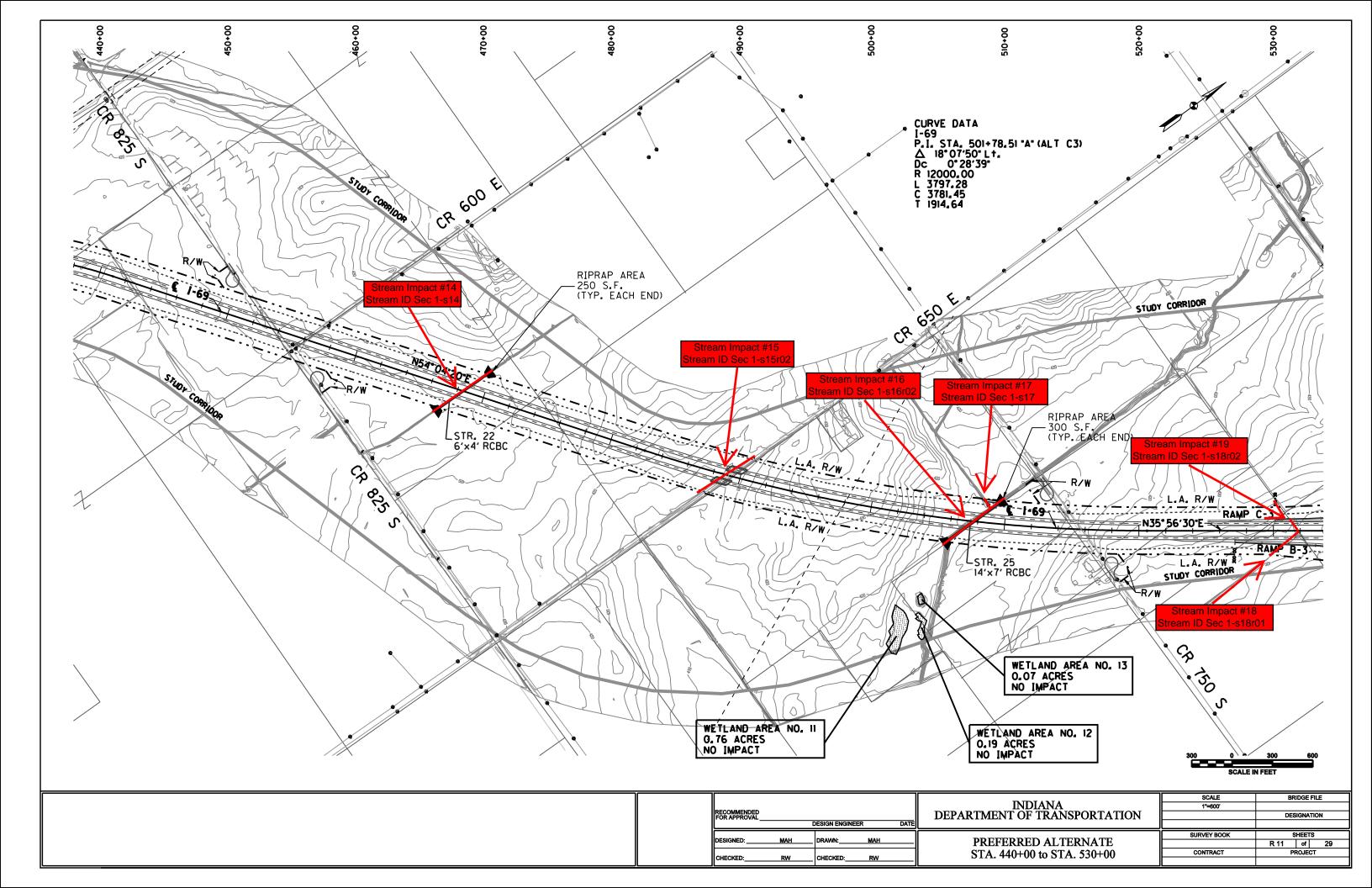
401 WQC APPLICATION ATTACHMENT #11 Project Plan Sheets Showing Water Resource Impact Locations

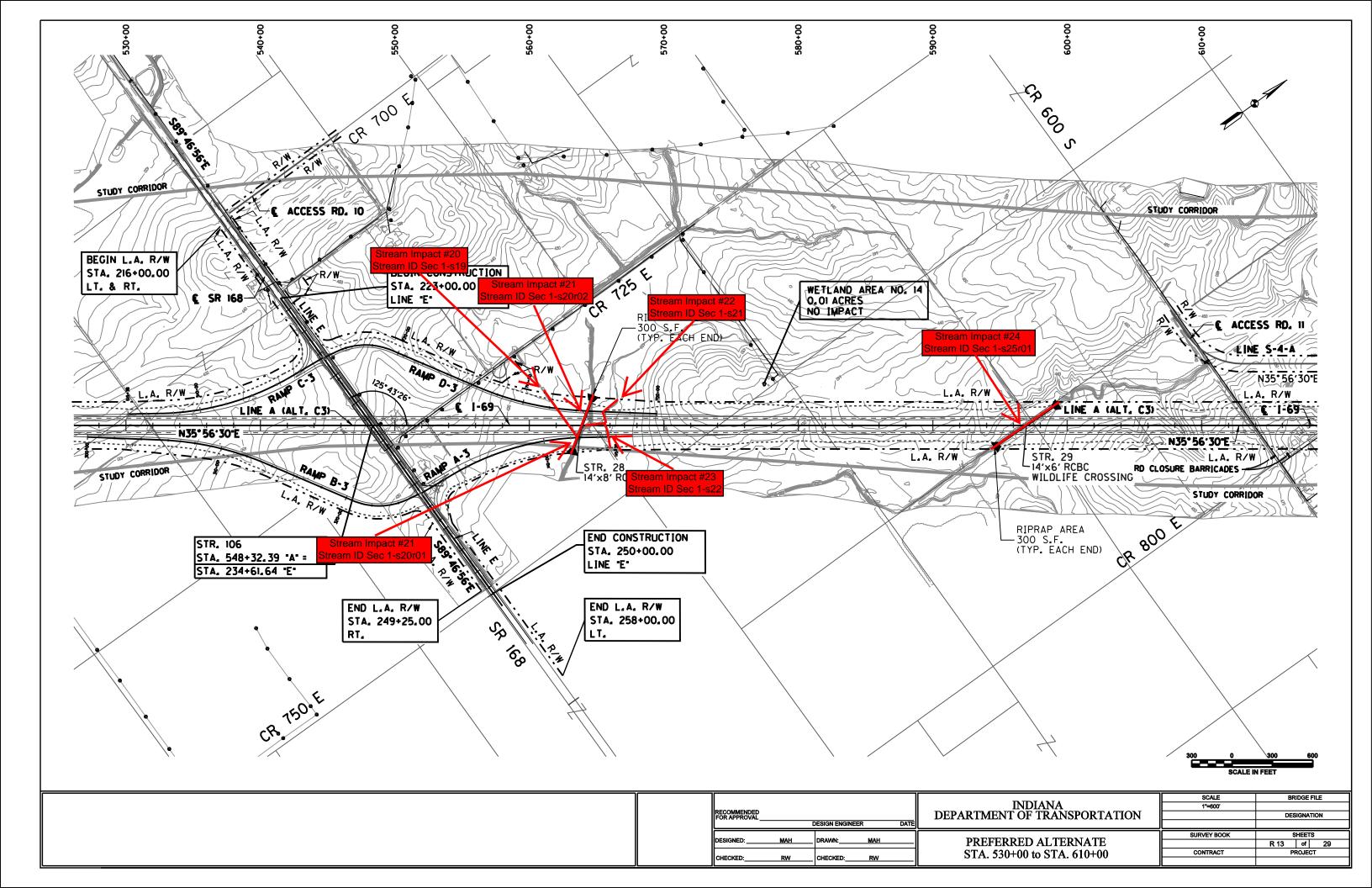


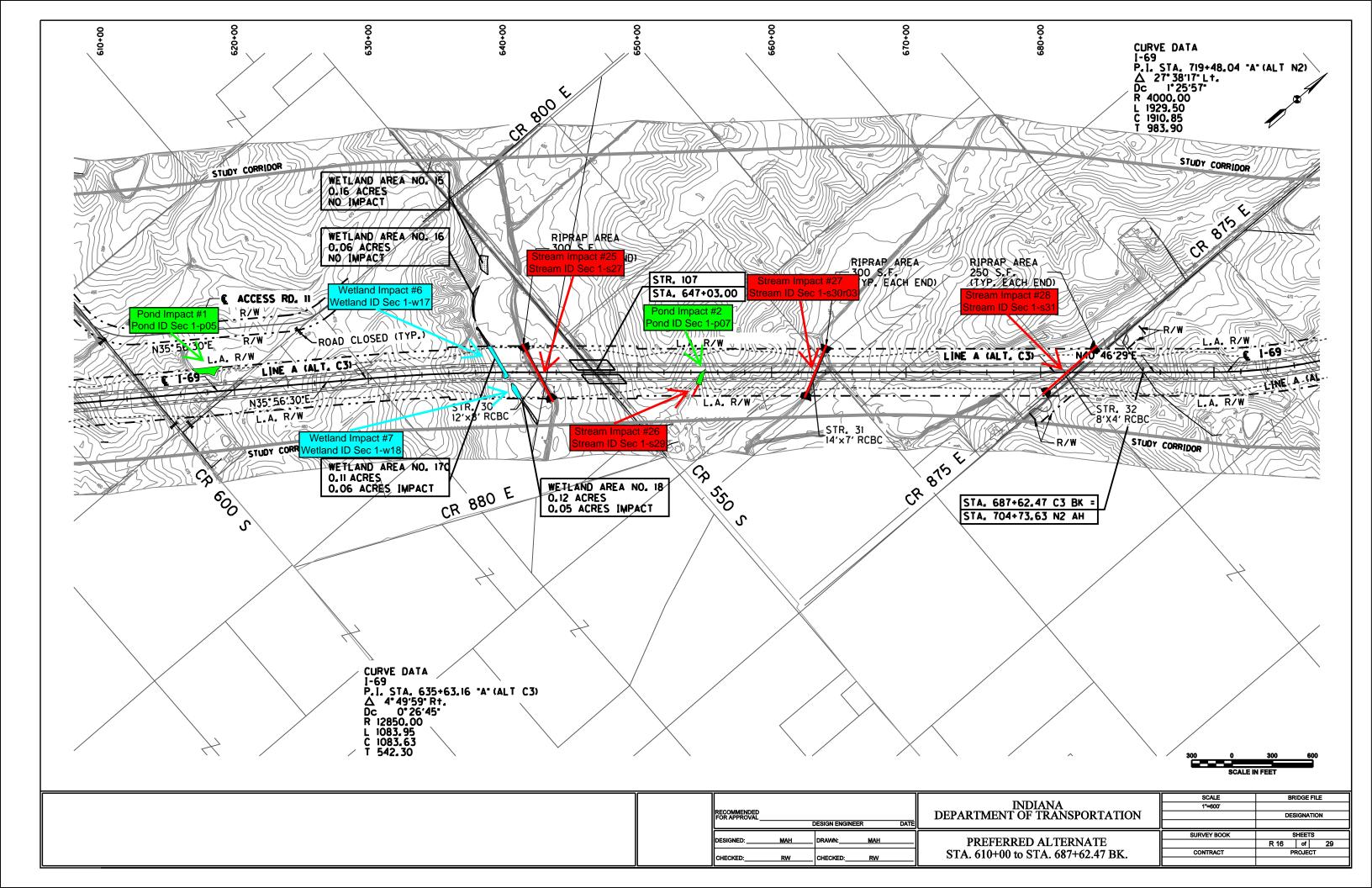


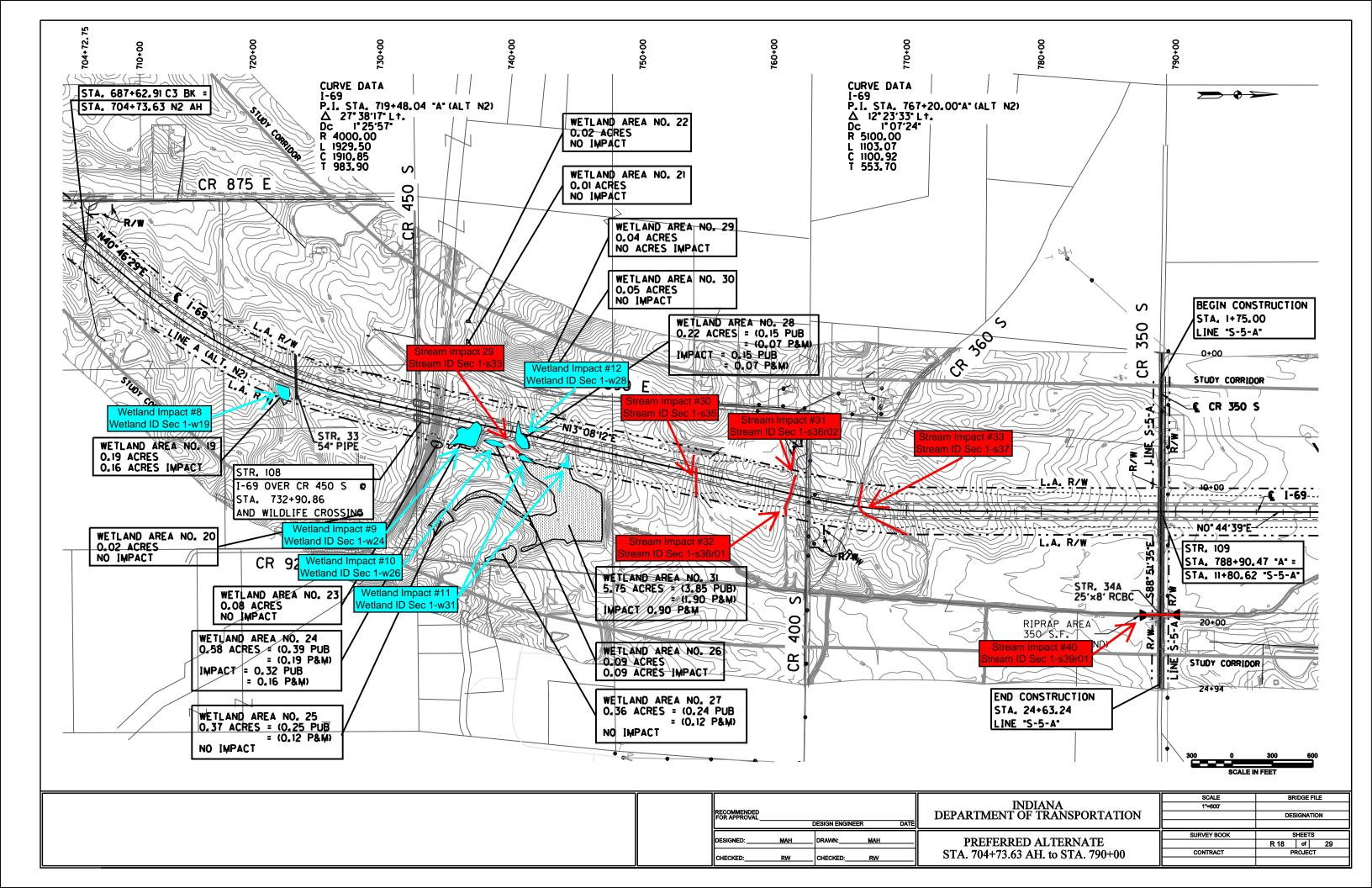


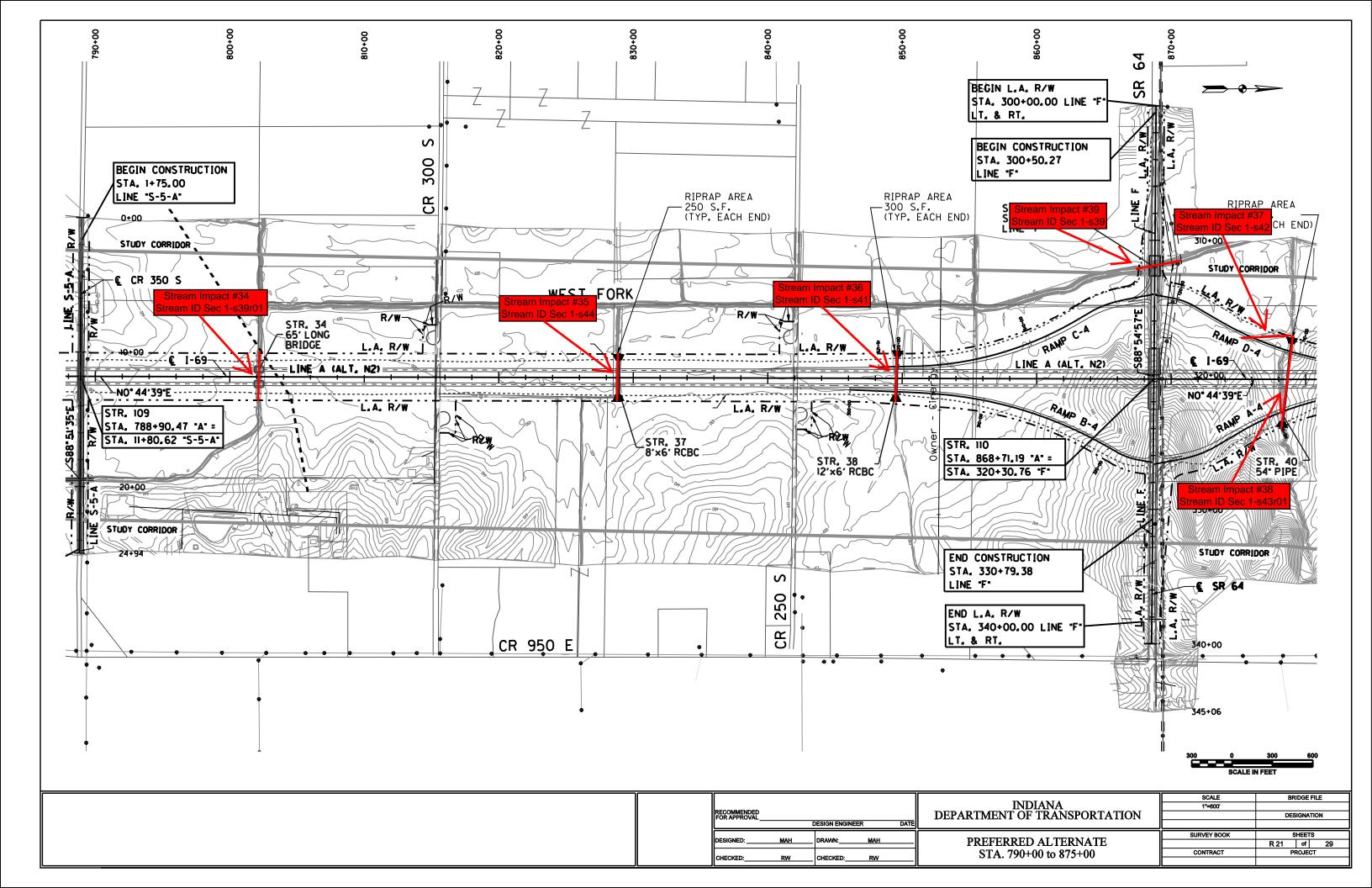


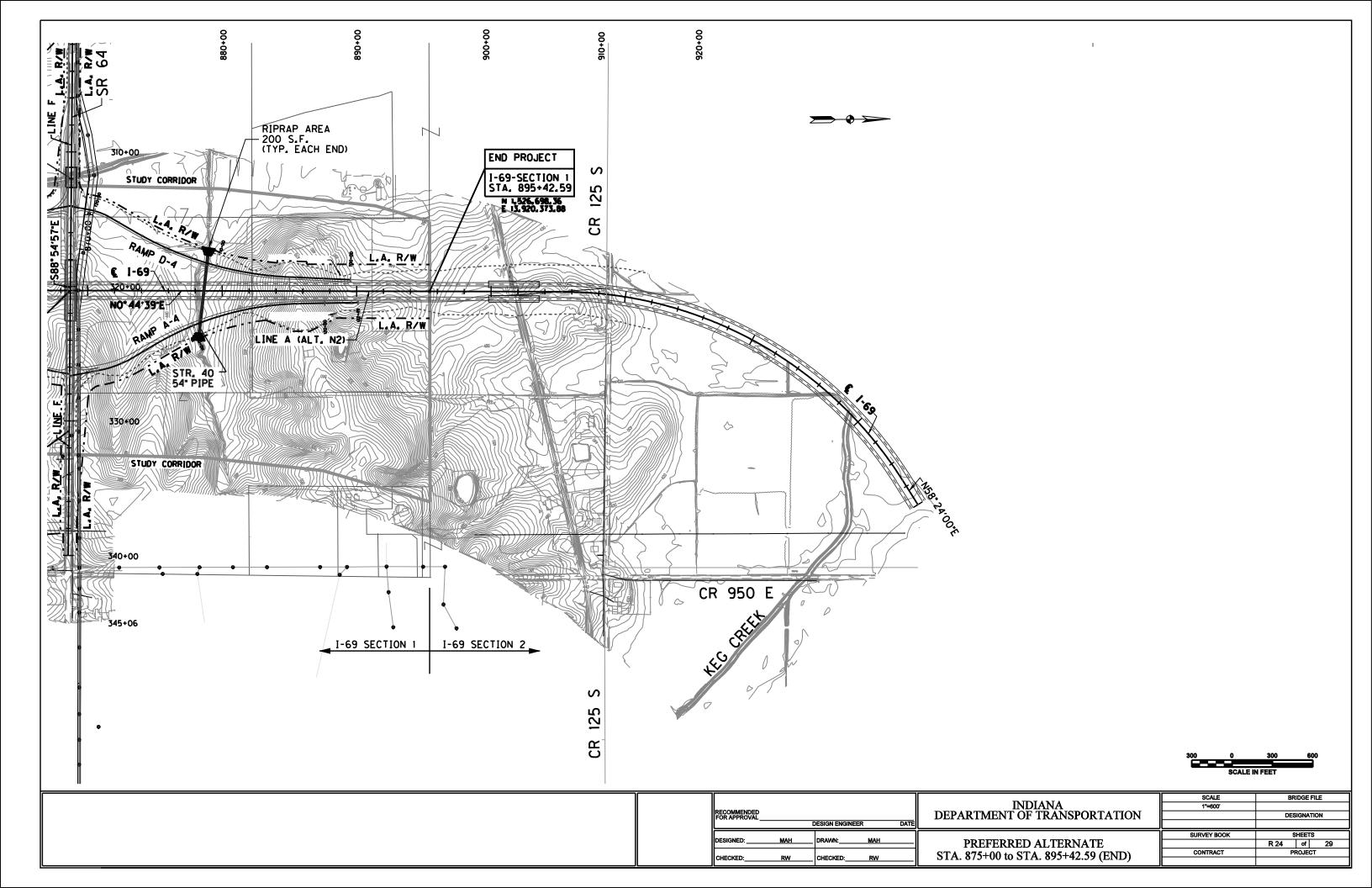












401 WQC APPLICATION ATTACHMENT #12 US Army Corps of Engineers Jurisdictional Determination Letter

DEPARTMENT OF THE ARMY

U.S. ARMY ENGINEER DISTRICT, LOUISVILLE CORPS OF ENGINEERS P.O. BOX 59 LOUISVILLE, KENTUCKY 40201-0059

August 17, 2007

Operations Division Regulatory Branch (North) ID No. LRL-2007-1043-asb

Ms. Michelle Hilary
Indiana Department of Transportation
Environmental Assessment Section
Government Building North, Room N848
100 North Senate Avenue
Indianapolis, Indiana 46204-2249

Dear Ms. Hilary:

This is in regard to your Waters of the United States Jurisdictional Determination Report, dated June 25, 2007, and your letter addressing the Report received on August 17, 2007, for Section 1 of the proposed Interstate 69 project (Des No. 0300377). Section 1 of the project runs for approximately 13 miles from the I-64/State Road 57 interchange to State Road 64 in Vanderburgh, Gibson, and Warrick Counties in Indiana.

Based on a review of the submitted information and information obtained during on-site inspections of the project corridor by Corps staff, we have determined that the corridor contains "waters of the United States," including jurisdictional wetlands. This includes 770 linear feet (LF) of perennial stream; 10,615 LF of intermittent stream; 3,885 LF of ephemeral stream; 1.35 acre of wetland; and 1.1 acre of open water.

This determination is based on the presence of (1) one or more tributaries (stream channels, man-made conveyances, lakes, ponds, rivers) that eventually drain or flow into navigable or interstate waters; and (2) wetlands adjacent to navigable or interstate waters, or that eventually drain or flow into navigable or interstate waters through a tributary system that may include man-made conveyances such as ditches or channelized streams. Furthermore, this jurisdictional determination is valid for a period of five years from the date of this letter unless new information warrants revision of the determination before the expiration date.

If you have any questions concerning this matter, please contact this office at the above address, ATTN: CELRL-OP-FN, or by calling Amy S. Babey at (502) 315-6691. A copy of this letter will be sent to your agent. Any correspondence should reference the assigned ID Number indicated above.

Sincerely,

RECEIVED

ORIGINAL SIGNED

AUG 2 1 2007

BLA - EVANSVILLE

James M. Townsend
Chief, Regulatory Branch
Operations Division

ADDRESS FOR COPY

Mr. Jeremy Kieffner Bernardin Lochmueller & Associates, Inc. 6200 Vogel Road Evansville, IN 47714

_



INDIANA DEPARTMENT OF TRANSPORTATION

100 North Senate Avenue Room N758

Indianapolis, Indiana 46204-2216

(317) 232-5533

FAX: (317) 232-0238

An Equal Opportunity Employer ● http://www.in.gov/dot

MITCHELL E. DANIELS, JR., Governor KARL B. BROWNING, Commissioner

Writer's Direct Line (317) 232-5417

Amy S. Babey Senior Project Manager/Biologist PO Box 59 Louisville, KY 40201

Re:

I-69 Evansville to Indianapolis, Section 1

Dear Ms. Babey:

The Indiana Department of Transportation (INDOT) requests your formal jurisdictional concurrence over the aquatic resources identified in Section 1 of the I-69 project that is proposed to run between Evansville and Oakland City from I-64 to SR 64. INDOT and the Corps of Engineers Louisville District (Corps) have been coordinating on this project since 2002, evaluating potential impacts to "waters of the U.S.", including wetlands, through site visits and data review. The impact evaluations for Section 1 of the proposed I-69 corridor commenced prior to the issuance of the Rapanos guidance (June 5, 2007) and the jurisdictional report (Report) for Section 1 dated June 28, 2007 has been submitted to your office.

In the Report, INDOT has identified numerous streams (totaling 15,270 linear feet), wetlands (totaling 1.35 acres), and open water areas (totaling 1.1 acres) which our respective staffs previously agreed to be "waters of the U.S." INDOT is willing to presume that each of the areas remains jurisdictional in light of the Rapanos guidance and is subject to the Clean Water Act permitting requirements. Additionally, INDOT is aware that it is entitled to an approved jurisdictional determination and the associated appeal rights under 33 CFR 331. Because INDOT presumes jurisdiction over all of the waters outlined in the Report, INDOT will forgo any appeal rights on the I-69 Section 1 Jurisdictional Determination, in order to expedite an approved jurisdictional determination by the Corps.

Finally, INDOT is aware that Corps jurisdiction may result in the requirement for mitigation to compensate for impacts to waters and wetlands within the Section 1 project corridor. INDOT intends to propose a mitigation plan upon submittal of the Department of the Army (DA) permit application that would compensate for each of the jurisdictional waters outlined in the aforementioned Report.

With this in mind, INDOT is requesting that the Corps provide a letter concurring with the Report. We respectfully request your assistance on this matter so that we may proceed with the completion of the Tier 2 Record of Decision and the submittal of the DA permit application.

Please contact me if you have any questions or concerns.

Sincerely,

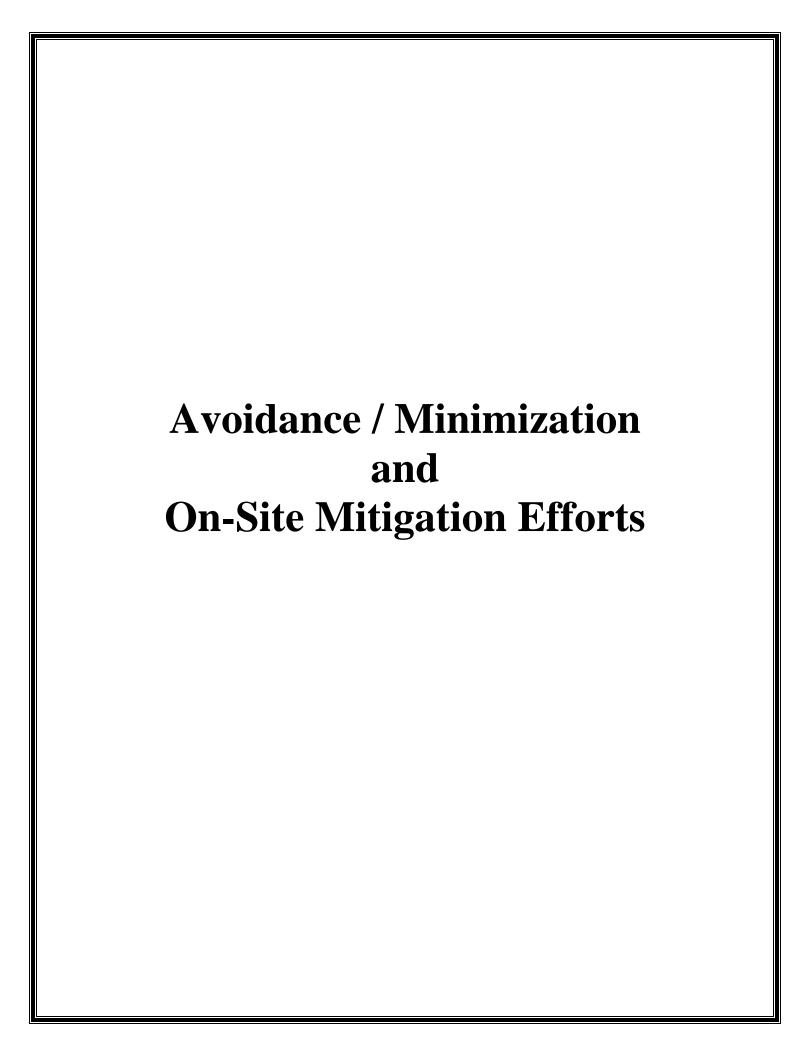
Michelle C. Hilary, JD

midalle likes

Manager, Office of Environmental Services

Indiana Department of Transportation

401 WQC APPLICATION ATTACHMENT #13 Conceptual Mitigation Plan And **On-Site Mitigation Efforts**



On-Site Mitigation Efforts

During the entire history of the I-69 Evansville to Indianapolis Project efforts have been ongoing to avoid and minimize impacts to water resources. Avoidance and minimization efforts in Section 1 during the Tier 1 EIS Phase of the project included narrowing the 2,000 foot corridor to approximately 500 feet in the area of the Pigeon Creek crossing to avoid and minimize the large wetland complexes located to the east and west of the proposed I-69 crossing of Pigeon Creek. Streams were also avoided and minimized during the Tier 1 phase of the project by adjusting the corridor so that many of the streams can be crossed to as close to perpendicular as possible to avoid lengthy stream relocation.

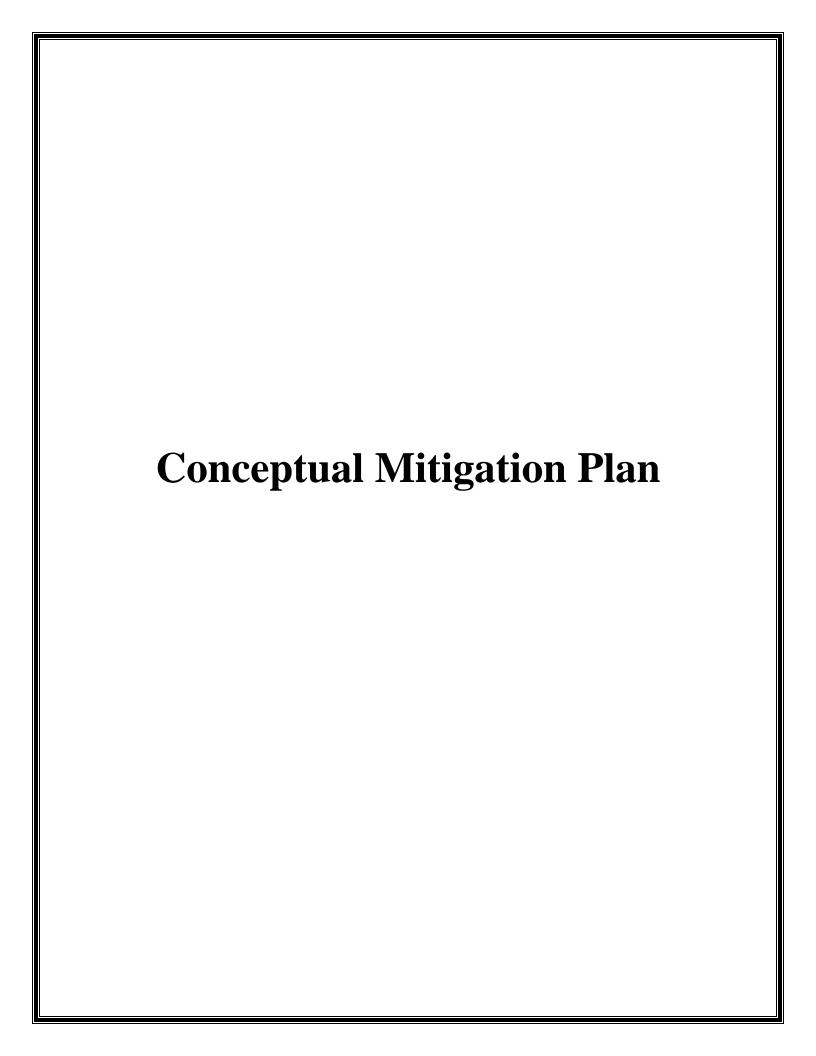
The Tier 2 EIS phase of the project looked at avoidance and minimization of water resources on a more defined basis. During Tier 2 the alternatives were placed within the 2,000 foot corridor in a manner that would avoid and minimize water resources. Section 1 had a total of 8 alternatives. Alternative 4 was identified as the Preferred Alternative. Alternative 4 has the least amount of stream impacts within the proposed right-of-way (15,450 feet) and has the greatest amount of wetland impacts within the proposed right-of-way (1.35 acre). The difference in wetland acres impacted by the 8 alternatives was minimal (1.35 acres – Alternative 4 to 0.80 acre – Alternatives 1 & 5); however, the difference is stream impacts was much broader (15,450 feet – Alternative 4 to 25,405 – Alternative 5). Because of the large difference in stream impacts and such a minimal amount of difference in wetland impacts, the stream impacts weighted more heavily in identifying the Alternative with the least amount of water resource impacts. In addition, during preliminary design of the Preferred Alternative (Alternative 4) minor shifts have been made to further minimize water quality impacts and as the design moves forward into final design more shifts may be made that will reduce the water resource impact even further.

To advance the permitting of Section 1 of the I-69 project at the current design level, 10% was added to all wetland and stream impacts to account for any change in the final design. In addition, the mitigation acreage was based on the 10% added impacts.

Onsite mitigation efforts will include structures that will allow for a natural channel stream bottom at locations that showed aquatic and/or terrestrial habitat connections across the proposed roadway. The natural channel structures (i.e., 3-sided box culvert or oversized 4-sided box culvert depressed at least 1-foot below the natural stream channel) will be placed at the following stream impact locations:

Stream Impact #13 – Structure #21 Stream Impact #16 – Structure #25 Stream Impact #21 – Structure #28 Stream Impact #24 – Structure #29 Stream Impact #25 – Structure #30 Stream Impact #27 – Structure #31 Stream Impact #40 – Structure #34A

In addition to the use of structures that will accommodate a natural stream channel bottom, bioengineering will be utilized, where appropriate and reasonable to limit the amount of riprap placed along the banks and in the stream channels for stabilization. If riprap is utilized for stream bank stabilization, it will be extended below the ordinary high water elevation to provide additional aquatic habitat.



I-69 Evansville to Indianapolis Section 1 Tier 2 Conceptual Mitigation Plan

The following Conceptual Mitigation Plan has been developed to offset potential impacts to wetlands, streams, and forests by the proposed Section 1 of the I-69 Project. Section 1 of the I-69 project begins just south of the I-164/SR57/I-64 interchange and ends just north of SR 64 west of Oakland City. This mitigation plan is conceptual compensation for probable wetland, stream, and forest impacts caused by this project.

I. Introduction

Wetland, stream, and upland forests impacts for Section 1 of the I-69 Project have been identified from field reconnaissance and supplemented with project specific planimetric and topographic maps, USGS maps, aerial photographs, National Wetland Inventory (NWI) maps, and Soil Survey maps. All wetland impacts were delineated using the 1987 Army Corps of Engineers Wetland Delineation Manual and the quality of these wetlands was assessed using the Indiana Wetland Rapid Assessment Protocol (InWRAP). The stream impacts were assessed for stream habitat quality using either the Quality Habitat Evaluation Index (QHEI) or the Primary Headwater Habitat Evaluation Index (HHEI) depending on the size of stream being impacted. Forest impacts were identified using the United States Department of Agriculture's definition of forests.

Section 1 of the I-69 Project is anticipated to impact approximately 1.18 acres of wetlands, of which 1.16 acres are palustrine emergent wetlands and 0.02 acre is palustrine forested wetlands. The InWRAP assessments completed on these wetlands indicated the wetlands impacted by Section 1 were fair to poor quality. Replacement ratios for palustrine forested wetlands are typically 3:1 to 4:1 (depending on quality) and palustrine emergent wetlands are typically 2:1. Wetland mitigation for Section 1 of the I-69 Project will require approximately 2.4 acres pending detailed coordination with the regulatory agencies (Indiana Department of Environmental Management - IDEM, United States Army Corps of Engineer - USACE, and Indiana Department of Natural Resources - IDNR) during the permitting process. In addition, approximately 0.7 acre of buffers may be needed around the wetland mitigation site. Additional area may be needed for access (ingress and egress) to the mitigation site for construction and monitoring.

Section 1 of the I-69 Project is anticipated to impact approximately 15,573 linear feet of streams, of which approximately 845 linear feet are perennial streams, 10,518 linear feet are intermittent streams, and 4,210 linear feet are ephemeral streams as identified on the USGS maps. The QHEI and HHEI assessments completed on these streams indicated that the streams impacted by Section 1 showed poor to moderate habitat quality. Stream mitigation under this conceptual plan will include approximately 11,850 linear feet of intermittent and/or ephemeral stream channel development planted with wooded riparian corridors (approximately 26 acres) and approximately 6,300 linear feet of existing streams (including over 3090 ft of perennial Pigeon Creek) will be planted with herbaceous filter strips. A total of approximately 18,150 linear feet of stream mitigation will be completed on this site. In addition, on site mitigation (e.g., bridging, oversizing box culverts and use of 3-sided box culverts to maintain a natural substrate, possible bio-engineering for stream bank stabilization, etc.) will be completed in all areas suitable within the Section 1 Preferred Alternative right-of-way to help offset the stream impacts.

The Indiana Department of Transportation (INDOT) made a commitment in the Tier 1 Environmental Impact Statement completed for the entire I-69 Project from Evansville to Indianapolis to replace all upland (non-wetland) forest impacts at a 3:1 ratio. In consultation with the environmental resource agencies, it has been agreed that this mitigation will include preservation as well as reforestation. Reforestation will be completed at a minimum ratio of 1:1 for replacement of all upland forests impacted

by the I-69 project (although more than 1:1 development may be completed). The balance of forest mitigation may be in the form of existing forest preservation at a ratio of up to approximately 2:1 (preserved forest to impacted forest). Section 1 is anticipated to impact approximately 27.4 acres of upland forests. This conceptual mitigation plan will include preservation of approximately 29 acres of existing forests and forest development (reforestation of existing agricultural fields) of approximately 96 acres. The total amount of forest mitigation under this conceptual plan will be 125 acres. Approximately 26 acres of this forest mitigation will be riparian habitat planted along the stream channels to be developed within the mitigation site.

II. Proposed Mitigation Area

The proposed mitigation site for Section 1 of the I-69 project is located in Gibson County just south of CR 900 south and east of CR 550 E. The location of the site is as follows: Indiana: Gibson County, Elberfeld Quadrangle, Union Township, T3S, R10W, Southwest Quarter of Section 25. Pigeon Creek flows through the site from the northwest to the southeast (See Attached Figures 1 and 2). The proposed mitigation site is located in the Highland-Pigeon 8-digit watershed and the majority of the site is within the floodplain of Pigeon Creek. Coordination with the current land owners is ongoing regarding the purchasing of a conservation easement on this parcel of land for mitigation purposes of I-69. The mitigation site is approximately 160 acres in size. The Gibson County Surveyor identified 3 legal drains located within the mitigation parcel which include: Pigeon Creek, Besing Lateral, and Stunkel Lateral. All three of these legal drains have a 75 foot legal easement from the top of bank on both sides of the creek. Coordination with the Gibson County Surveyor identified that the 75 foot legal drain easement is required for Pigeon Creek because of its size and drainage area, but both the Besing Lateral and Stunkel Lateral legal drain easements may be narrowed to 35 feet in width. Additional coordination and a legal drainage abatement agreement with the Gibson County Drainage Board will be required to narrow these legal drain easements. Photographs showing the existing conditions of the mitigation site are in Appendix A.

The proposed design of this mitigation site would include the development of approximately 2.4 acres of forested wetlands, 2.5 acres of emergent wetlands, 96 acres of bottomland forests, 12,015 linear feet of stream development (intermittent and/or ephemeral), 6,350 linear feet of grass filters (24 acres) within the legal drain easements of the existing channels within the mitigation site, and 30.4 acres of existing bottomland/wetland forest preservation (See Attached Figures 3 and 4). The reforestation of this parcel will provide an increase is core forest habitat of approximately 60 acres (See Attached Figure 5). These combined mitigation features will create a mosaic of wetland, riparian, and bottomland woods habitat within an area where the majority is currently being farmed in row crop production providing very little natural habitat value.

The soils identified within the mitigation site from the Gibson County Soil Survey consist of Wakeland silt loam and Birds silt loam in the majority of the mitigation site and Stendal silt loam, Hosmer silt loam, and Peoga silt loam to a lesser extent (See Attached Figure 3). These soils are all identified as frequently flooded and poorly to somewhat poorly drained with the exception of the Hosmer silt loam, which occupies only a small slope area of higher elevation on the southwest corner of the site. Birds and Peoga silt loams are classified as hydric soils in Gibson County, while the Stendal and Wakeland are identified as having hydric inclusions. The NWI maps for the Elberfeld quadrangle identified the existing forest areas as palustrine forested wetlands and palustrine scrub/shrub wetlands to a lesser extent (See Attached Figure 3). Development of this mitigation site for the Section 1 impacts will connect the two isolated NWI mapped wetlands in the northeast portion of the mitigation site to the larger block of NWI mapped forested wetland area in the southeast portion of the mitigation site creating approximately 60 acres of core forest habitat.

The site is largely within the floodplain of Pigeon Creek, with floodplain mapping showing only small portions on the extreme northeast and southwest corners outside of the floodplain limits (see Figure 3). Two higher elevation areas in the southwestern portion of the site are completely encompassed by the floodplain, but are shown to be out of the floodplain. Testimony from the current land owners has confirmed that large portions of the site flood regularly

The forested wetland mitigation area may be planted with hard mast producing species such as pin oaks, swamp white oaks, swamp chestnut oaks, overcup oaks, shellbark hickories, and northern pecan, as well as bald cypress. The emergent wetland mitigation area may be seeded with an emergent wetland seed mix or sedge meadow seed mix, including numerous grass and forb species. The non-wetland bottomland woods reforestation area may be planted with pin oaks, bur oaks, shumard oaks, shellbark hickories, sugarberry, and sweetgum with an understory of common spicebush, elderberry, gray dogwood, and red mulberry. All of the species proposed for planting in the non-wetland bottomland woods mitigation area are from the pre-approved IDNR tree list.

This proposed mitigation site may have approximately 12,015 linear feet of stream channels developed within the mitigation site connecting the different habitat areas and providing diversity of hydrologic regime and habitat. One of the unique factors of this mitigation site is the presence of the old Pigeon Creek channel before it was channelized (See Attached Figures 4 and 5). One of the items within the proposed concept of this mitigation site is excavation of a portion of the old Pigeon Creek channel and reconnection with active drainage channels. The areas adjacent to the proposed stream development locations may be planted with pioneer species such as red maples, black willows, green ash, eastern cottonwood, and sycamores to establish a riparian corridor at a faster rate to provide shading of these channels. The stream channels proposed for development will be seeded with a swale seed mix to help stabilize the banks, and additional habitat features may be incorporated as appropriate.

III. Goals

The goal of this mitigation is to create wetlands, streams, and upland forests which not only mitigate the environmental impacts caused by Section 1 of the I-69 project, but enhance the environment and water quality of the Highland Pigeon watershed. Pigeon Creek is identified as an impaired stream in Vanderburgh County downstream of the proposed mitigation site. This mitigation design concept could help to improve the downstream water quality by taking land out of agricultural use and also provided a filtration of surface water runoff from adjacent lands entering Pigeon Creek. This mitigation concept will also help to decrease flooding downstream by providing a storage area for floodwaters greater than what currently exists. This mitigation area should accomplish these goals and emphasize natural wetland, stream, and bottomland forest communities that use native trees and herbaceous vegetation. It is anticipated that target functions and values for the mitigation site may be achieved within a 3 to 5 year time frame, including flood storage and wildlife use; however, woody species will require a longer time frame to achieve their complete functions. Complete habitat development may take 20 – 30 or more years for woody species to mature. Education and research opportunities may be available through the life of the project.

The mitigation area will replace, with a net gain, flood retention, ecological functions, and wildlife habitat values of the impacted wetland and stream areas. Converting farm fields connected to existing bottomland/wetland complexes will provide <u>an opportunity</u> for: (1) a higher "carrying capacity" for wildlife, (2) colonization by TES species; (3) potential habitat for State and Federal listed animal species such as the Indiana bat, bald eagle, evening bat, and possibly others; (4) habitat for gamebirds and passerines; and (5) habitat for many reptiles, amphibians, and mammals. Environmental benefits will be significant upon the development of the mitigation site. As the mitigation site matures, which may take more than 5 years, these benefits will continue to increase.

Types, Functions, and Values of Impacted Existing Wetlands

This project will impact approximately 1.18 acres of jurisdictional wetlands (1.16 acres palustrine emergent wetlands and 0.02 acre palustrine forested wetland), 15,573 linear feet of streams (845 perennial, 10,518 intermittent, and 4,210 ephemeral), and 27.4 acres of upland forests. The wetland impacts caused by this project were identified using the Army Corps of Engineers Wetland Delineation Manual criteria. The primary functions and values of the wetland, stream, and upland forests impact sites are flood storage and to a lesser extent, water filtration and wildlife habitat.

Types, Functions, and Values of the Proposed Mitigation Site

The potential mitigation area is primarily farm fields, connected with existing NWI mapped forested and scrub/shrub wetlands and Pigeon Creek. INDOT would purchase lands in fee simple title or as conservation easements for the mitigation site to replace the lost functions and values of the impacted wetlands, streams, and forests within the right-of-way of Section 1 of the I-69 project. Coordination with the current land owners identified that they would be interested in selling a conservation easement on the 160 acre parcel of land that is being identified as the proposed mitigation site for Section 1. The farm fields purchased for this mitigation would be converted, for the most part, to bottomland forests, riparian forests, and streams and to a lesser extent forested and emergent wetlands. Buffer strips may be located around the wetland mitigation areas to act as filters for runoff from adjacent land. Hydrology for the mitigation site would be from the frequent flooding and precipitation runoff from the adjacent lands. The identified mitigation site could anticipate flooding from Pigeon Creek plus local surface runoff. The mitigation site should replace, and improve upon, the flood storage, water filtration, and wildlife functions and values being lost at the impact sites.

IV. Mitigation Success Criteria

A total of 1.18 acres of wetlands, 15,573 linear feet of streams, and 27.4 acres of upland forests were identified within the Preferred Alternative of Section 1 of the I-69 Project. Approximately 2.5 acres of wetland mitigation, 82.2 acres of upland forests mitigation, and 15,573 linear feet of stream mitigation will be required for this project. This Conceptual Mitigation Plan has a greater than 3:1 replacement ratio for forested wetland impacts, greater than 2:1 replacement ratio for emergent wetland impacts, greater than 3:1 replacement ratio for upland forest impacts and at least a 1:1 mitigation ratio for stream impacts. A buffer for the wetland mitigation site has been included in this plan. Approximately 0.7 acre of land is included for such a buffer. Buffer requirements may be reduced based on specific site conditions. All wetland, stream, and forest impacts will be mitigated within the same 8-digit watershed or same county as the impacts. Table 1 shows the types, impacts, mitigation ratios, and mitigation acres required for Section 1 of the I-69 Project.

Table 1. Habitat types, Impacts, Mitigation Ratios, Mitigation Required, and Mitigation Being Offered for Section 1 of the I-69 Project.			
Habitat Type	Impacts	Mitigation Ratio	Mitigation Required
Forested Wetlands	0.02 acre	3:1	0.06 acre
Emergent Wetlands	1.16 acres	2:1	2.32 acres
Wetland Buffer			0.7 acre
Upland Forests	27.4 acres	3:1	82.2 acres
Streams	15,573 feet		15,573 feet
Total Mitigation Required	28.6 acres		0.06 acres PFO
	15,573 feet		2.32 acres PEM 0.7 acres wetland buffer 82.2 acres UPL Forest 15,753 feet of streams

This mitigation area includes 30.4 acres of existing bottomland/wetland forest preservation, 25 acres of riparian woods planted along the proposed stream channels and 0.7 acre wetland buffer.

PEM Palustrine Emergent Wetland PFO Palustrine Forested Wetland

UPL Upland

V. Implementation Plan

Rational for Expected Success of Mitigation Area

Reasons for expected success of this mitigation site include the occurrence of unique and high quality habitats within and adjacent to the mitigation site, the presents of existing bottomland/wetland forests, the potential to add core forest habitat, the presents of Pigeon Creek running through the site, and the presence of hydric soils within the mitigation site. This mitigation site is also located within the Indiana bat maternity colony that was identified within Section 1 in the Revised Biological Opinion from the United States Fish and Wildlife Service. This mitigation site would extend the existing habitats within and adjacent to the mitigation site and connect the isolated woods in the northeast portion of the site to the larger woods in the southwestern portion of the site.

Responsible Parties

The Indiana Department of Transportation would purchase the mitigation site or purchase a conservation easement with a restriction clause on its special use as a mitigation site. Properties will have signs indicating "No Spraying or Mowing". Monitoring may be completed by INDOT or a contracted environmental consultant.

Habitat Improvement Structures

Habitat improvement structures may be constructed within the mitigation site. Examples could include bluebird boxes, wood duck boxes, bat roosting structures, raptor nesting platforms, and others.

Construction Schedule

Site preparation of the mitigation site will occur in a timely manner to allow planting to immediately follow in the spring of the year.

^{**} This area is located within the legal drain easements and will be planted with herbaceous vegetation to help filter runoff from adjacent lands.

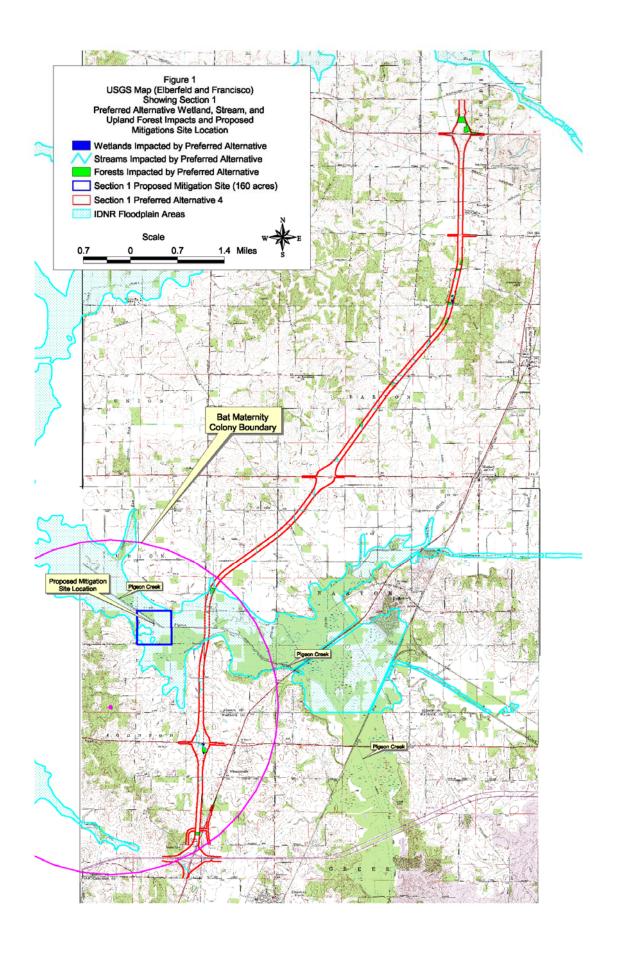
Monitoring

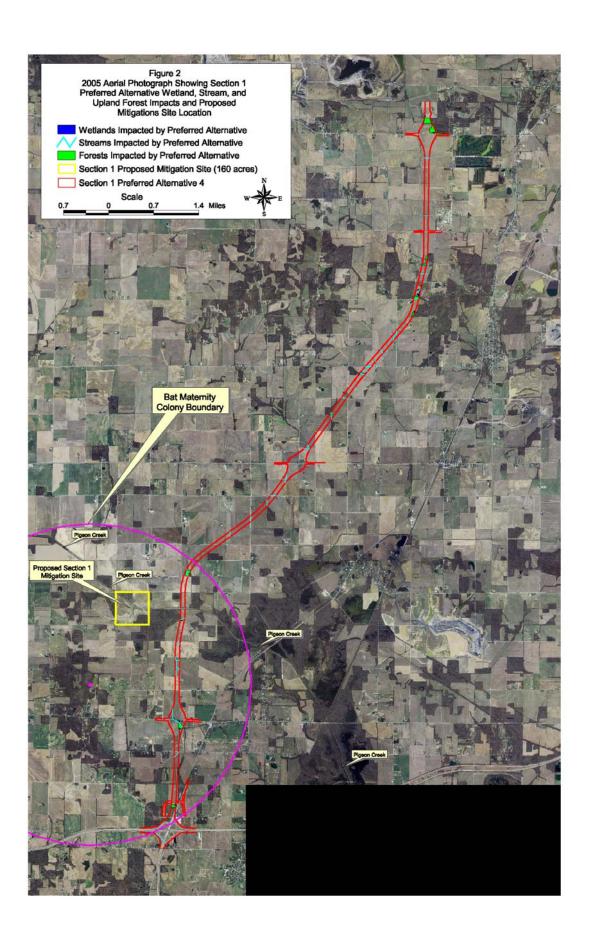
Monitoring will be determined during the permitting process and will follow all monitoring conditions stated in the permits.

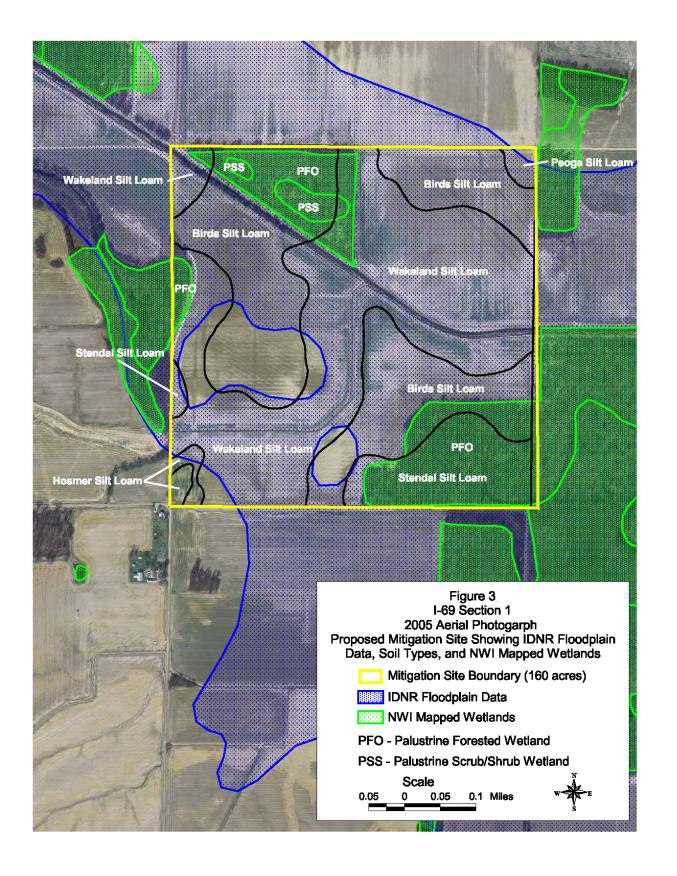
VI. Summary

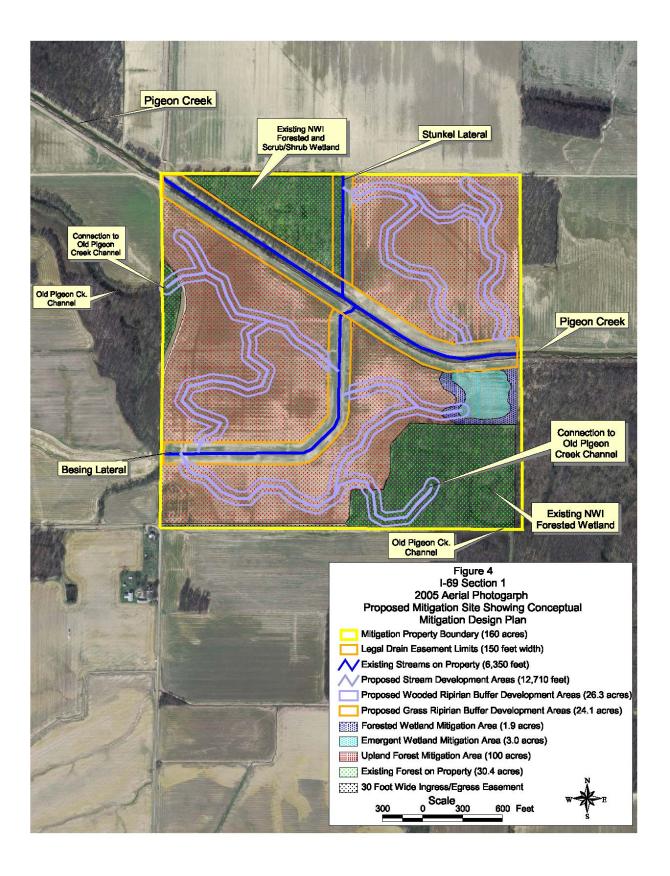
This Conceptual Mitigation Plan purposes to create approximately 5 acres of wetlands for impacts to 1.18 acres of wetlands, 11,850 liner feet of stream channels and 6,300 linear feet of existing stream channel planting for impacts to 15,573 linear feet of stream impacts and 96 acres of upland forest development along with 30.4 acres of existing upland forest preservation for impacts to 27.4 acres of existing upland forests caused by the construction of the Preferred Alternative for Section 1 of the I-69 project in Gibson County, Indiana. Under this plan, forested wetlands would be replaced at a greater than 3:1 ratio, emergent wetlands would be replaced at a greater than 2:1 ratio, streams mitigation would be complete at a minimum of 1:1 ratio, and upland forests would be replaced at a greater than 3:1 ratio. Approximately 160 acres of land would be developed and preserved into a mosaic of wetlands, stream channels, and upland forest habitat.

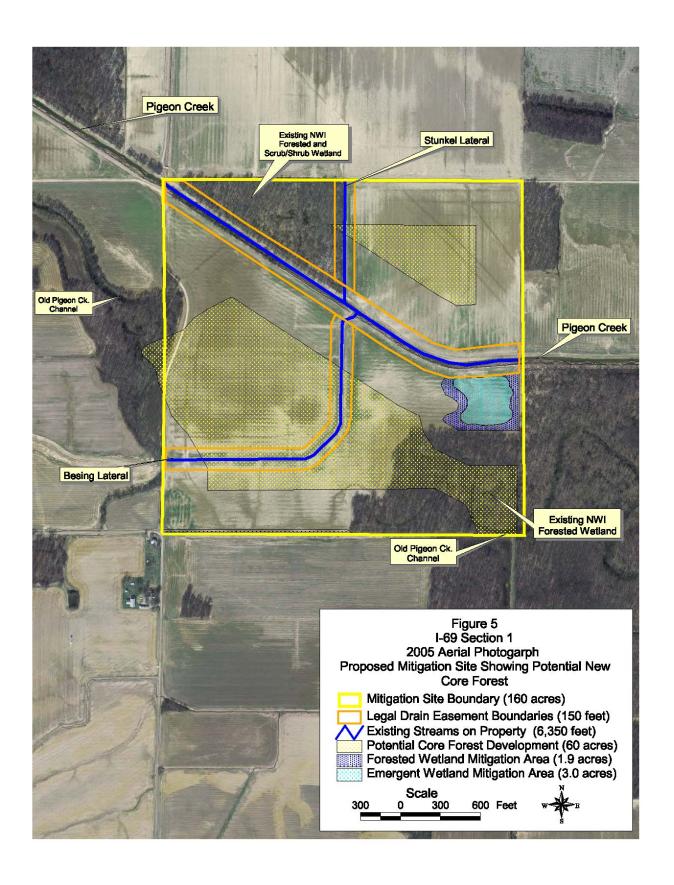
To offset unavoidable wetland, stream, and upland forest impacts caused by the project, compensatory mitigation will be offered to replace lost habitat within the same watershed or county. Replacement of habitats at the proposed mitigation site will provide increased wildlife functions and values. The mitigation site will be restricted from other uses to ensure that it remains in a natural condition in perpetuity.

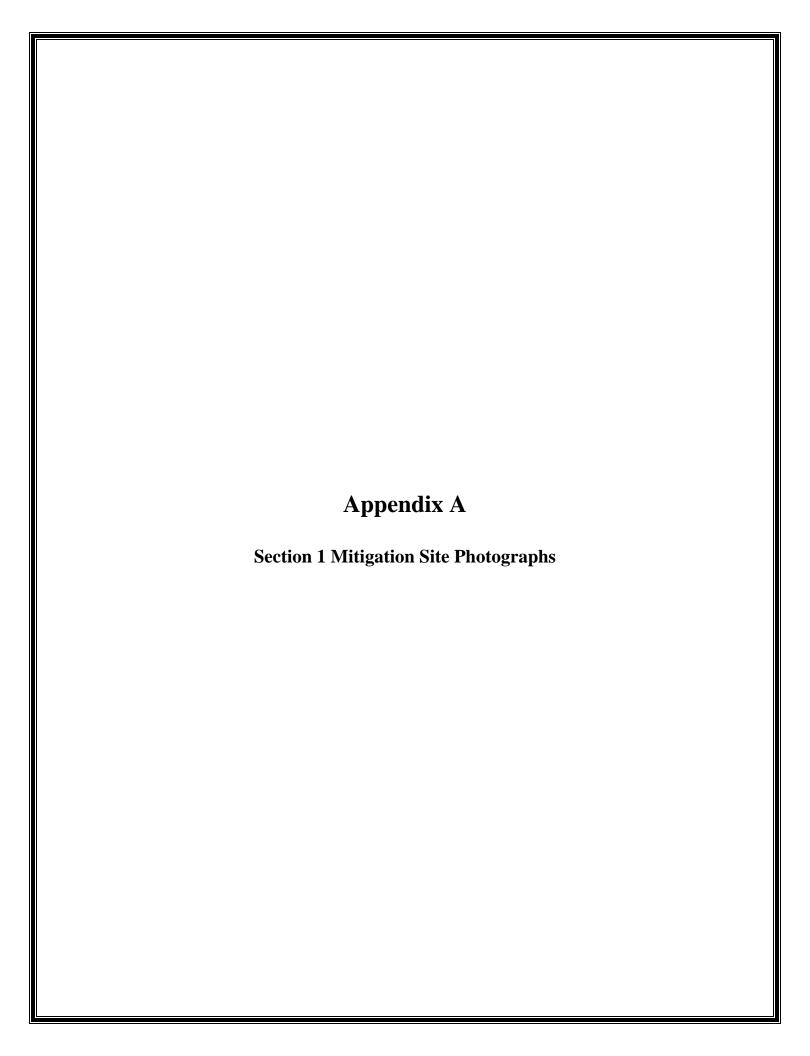














Photograph Showing Existing Woods on North Side of Pigeon Creek.



Photograph Showing Field on North Side of Pigeon Creek.



Photograph Showing Field on South Side of Pigeon Creek.



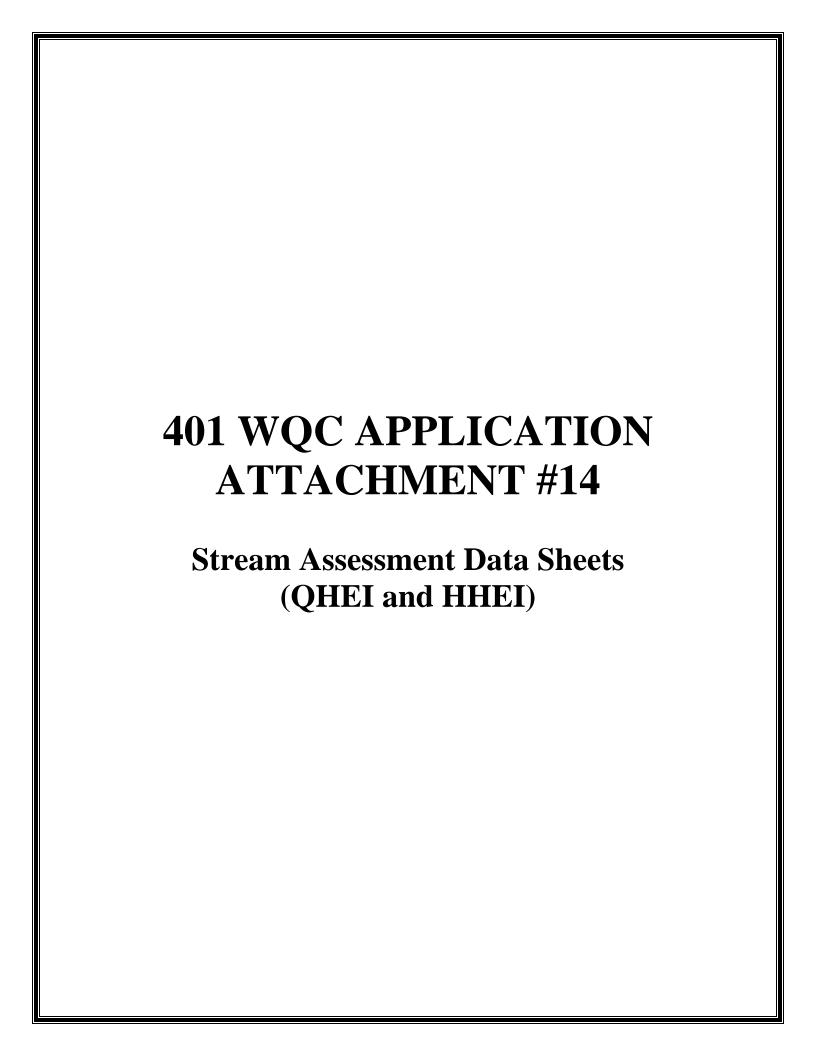
Photograph Showing Field on South Side of Pigeon Creek.



Photograph Showing Old Pigeon Creek Channel And Existing Woods on South Side of Pigeon Creek.



Photograph Showing Legal Drain on South Side of Pigeon Creek.





SITE NAME/LOCATON I-69 Section 1				
SITE NUMBER sec1-s02r1 RIVER BAS	SIN Patoka (#05120209)	DRAINAGE AR	EA (m1 ²) 0.23	
LENGTH OF STREAM REACH (ft) 200' LAT	LONG	RIVER CODE	RIVÉR MILE	
DATE 8/4/05 SCORER JE	СОММ			
NOTE: Complete All Items On This Form - Refe	r to "Field Evaluation Manua	al for Ohio's PHWH St	reams" for Instructions	
STREAM CHANNEL NONE / NATURAL CHAI	NNEL	RECOVERING	⊠ RECENT OR NO RECOVE	ERY
MODIFICATIONS			I	
 SUBSTRATE (Estimate percent of every type of (Max of 32). Add total number of significant substr boxes A & B. 	substrate present. Check ONL ate types found (Max of 8). Fina	Y two predominant substal metric score is sum of	нн	
TYPE PERCEN ☐ ☐ BLDR SLABS [16 pts]	<u>NT TYPE</u> ☑ ☐ SILT [3 pt]		PERCENT Metro	
☐ ☐ BOULDER (>256 mm) [16 pts]	LEAF PACK/W	OODY DEBRIS [3 pts]		
☐ ☐ BEDROCK [16 pt]	☐ ☐ FINE DETRITU ☐ CLAY OR HAR		50 Subst	
GRAVEL (2-64 mm) [9 pts]	MUCK [0 pts]		5	
			A+I	В
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock				
SCORE OF TWO MOST PREDOMINATE		NUMBER OF (B)	2	
SUBSTRATE TYPES	SUBST	RATE TYPES	L Pool D	\on t h
2. MAXIMUM POOL DEPTH (Measure the maximum	n nool depth within the 61 met	er (200 ft) evaluation re	Pool D	
evaluation. Avoid plunge pools from road culverts of			ck ONLY one box)	;
>30 centimeters [20 pts]		5 pts]	 	
22.5 – 30 cm [30 pts] >10 – 22.5 cm [25 pts]	☐ <5 cm [5 pts] ☐ NO WATER OR N	MOIST CHANNEL [0 pts]		
COMMENTS 3"	MAXIMUM POOL DEPT	H (centimeters)	7.6 cm Bank	lth
3. BANK FULL WIDTH (Measured as the average of	f 3-4 measurements)	(Chec	ck ONLY one box)	
	>1.0 m – 1.5 m (> ≤1.0 m (≤ 3' 3") [5	3' 3" – 4' 8" [15 pts] p ts]	15	•
COMMENTS W=48", D=24"	AVERAGE BANKFULL W	/IDTH (meters)	1.2 m	
RIPARIAN ZONE AND FLOODPLAIN QUALITY	This information must also be ☆NOTE	•	it (R) as looking downstream☆	
<u>RIPARIAN WIDTH</u>	FLOODPLAIN QUALITY			
L R (Per Bank) L R □ Wide >10 m □ □ □ Moderate 5 – 10 m □ □ □ Narrow <5 m	(Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Residential Park, New Field Fenced Pasture	L R □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction	
COMMENTS FLOW REGIME (At Time of Evaluation)	(Check ONLY one bo)x)		
☐ Stream Flowing ☐ Subsurface Flow with Isolated Pools (Interstitial	Moist Channel, Isola	itéd Pools, No Flow (Interr	nittent)	
COMMENTS (200 ft) of cha				
SINUOSITY (Number of bends per 61 m (200 ft) of chall None 1.0 1.5 1.5	nnel) (Check <i>ONLY</i> one both control of the control	ox) 3.0 >3		
STREAM GRADIENT ESTIMATE ☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate	☐ Moderate (2 ft/100 ft)	☐ Moderate to	Severe	00 ft)

HEIPERFORMED? 🔲 Yes 🛛	No QHEI So	core		If Ye	es, Attach Complete	ed QHEI Form
DOWNSTREAM DESIGNA					•	
	` ,		Distance from Ev	aluated Stream		
CWH Name			Distance from Ev			
EWH Name			Distance from Ev			
APPING: ATTACH COPIES OF M JSQS Quadrangle NameElberfi						1
	_					
			Township/City Joh	nson Township		
ISCELLANEOUS		a of Look Decemberation	7 20 05	Quantity	0.40"	
Base Flow Conditions? ☐ Yes [7.28.05		0.10	
Photograph Information		<u>-</u>				
Elevated Turbidity? ☐ Yes 🛭 N	lo Can	opy (% open)	6		•	
Nere samples collected for water ch	nemistry?	res ⊠ No Lab Num	nber (Note lab sample no	. or id and attach resu	lts)	
Field Measures - Temp (°C)	Dissolved	d Oxygen (mg/l)	pH (S.U.)	Cond	ductivity (µmhos/cn	٦)
s the sampling reach representative	e or the stream?	⊠ Yes □ No If	r not, please explain			
Additional comments/description of	nollution impacts	-			<u>.</u>	
	ponduoir impuoio					
Fish Observed?	Voucher?	☐ Yes ☐ No :	Salamanders Observed?	☐ Yes ☐ No	Voucher?	∐ Yes ∐ No
Fish Observed? Yes No Frogs or Tadpoles Observed? Yes No Comments Regarding Biology	o Voucher?	 ☐ Yes ☐ No Aquatic Ma	acroinvertebrates Observ	— — ed? ☐ Yes ☐ No	Voucher?	☐ Yes ☐ No
Frogs or Tadpoles Observed? Comments Regarding Biology DRAW Include Important landma	O Voucher?	Yes Aquatic Ma	acroinvertebrates Observ	ed? Yes No	Voucher?	☐ Yes ☐ No
Frogs or Tadpoles Observed? Comments Regarding Biology DRAW Include Important landma	O Voucher? VINGS AND NARI	Yes Aquatic Ma	acroinvertebrates Observ	ed? Yes No	Voucher?	☐ Yes ☐ No
Frogs or Tadpoles Observed? Comments Regarding Biology Include Important landma	O Voucher?	Yes Aquatic Ma	acroinvertebrates Observ	ed? Yes No	Voucher?	☐ Yes ☐ No
Frogs or Tadpoles Observed? Comments Regarding Biology Include Important landma	O Voucher?	Yes Aquatic Ma	acroinvertebrates Observ	ed? Yes No	Voucher?	☐ Yes ☐ No
Frogs or Tadpoles Observed? Comments Regarding Biology Include Important landma	O Voucher?	Yes Aquatic Ma	acroinvertebrates Observ	ed? Yes No	Voucher?	☐ Yes ☐ No
Frogs or Tadpoles Observed? Comments Regarding Biology Include Important landma	O Voucher? VINGS AND NARI	Yes Aquatic Ma	acroinvertebrates Observ	ed? Yes No	eted) of the stream's loc	☐ Yes ☐ No
Frogs or Tadpoles Observed? Comments Regarding Biology Include Important landma	O Voucher?	Yes Aquatic Ma	acroinvertebrates Observ	ed? Yes No	Voucher?	☐ Yes ☐ No
Frogs or Tadpoles Observed? Comments Regarding Biology Include Important landma	O Voucher?	Yes Aquatic Ma	acroinvertebrates Observ	ed? Yes No	eted) of the stream's loc	☐ Yes ☐ No
Frogs or Tadpoles Observed? Comments Regarding Biology Include Important landma	Voucher?	RATIVE DESCRIPTION atures of interest for	acroinvertebrates Observ	ed? Yes No	voucher?	☐ Yes ☐ No
Frogs or Tadpoles Observed? Comments Regarding Biology Include Important landma	Voucher?	RATIVE DESCRIPTION atures of interest for	acroinvertebrates Observ	ed? Yes No	voucher?	☐ Yes ☐ No
Frogs or Tadpoles Observed? Comments Regarding Biology Include Important landma	Voucher?	RATIVE DESCRIPTION atures of interest for	acroinvertebrates Observ	ed? Yes No	eted) of the stream's loc	☐ Yes ☐ No
Frogs or Tadpoles Observed? Comments Regarding Biology Include Important landma	O Voucher?	RATIVE DESCRIPTION atures of interest for	acroinvertebrates Observ	ed? Yes No	voucher?	☐ Yes ☐ No
Frogs or Tadpoles Observed? Comments Regarding Biology Include Important landma	Voucher?	RATIVE DESCRIPTION atures of interest for	acroinvertebrates Observ	ed? Yes No	voucher?	☐ Yes ☐ No

	0)	WQ Biological St	udies QHEI	(Qualitati	ve Habitat Eval	luation Index)	
Sample #	bio		tream Name		Location Section 1	of proposed I-69 cor	ridor
	Samuela Data			· · · · · · · · · · · · · · · · · · ·			
Surveyor MP, EC	Sample Date August 4, 2005	County Gibson	Macro Sample N/A	e lype	⊠ Habitat Complete	QHEI Score:	33
1 – Substrate	(20 points m	aximum)			Su	bstrate Score:	5
		ol & 1 Predominant Rif		Substrate	e Quality (check only	1, or check 2 and AV	(ERAGE)
Check all that Predominant PR Bldrs/Sla Boulders Gravel (7 Sand (6) Bedrock	Present P R	P=Pool, R=Rif Predominant PR Hardpan (4) Detritus (3) Muck (2) Sit (2) Sit (2) Sludge (1) Artificial (0)	fle Present P R S S S S S S S S S S S S S	⊠ Sile	☐ Sand s (0) ☐ Rip/R	pan (0)	(-2) (-1)
NOTE: Ignore slu sources; score ba			ubstrates present	t (2)			
2 – Instream	Cover (20 po	ints maximum)			Instream	n Cover Score:	0
Type (check ALL Undercut bank Overhanging Shallows (in s Rootmats (1)	ks (1) vegetation (1) low water) (1)	Deep pools (2) Rootwads (1) Boulders (1) Comments: no sufficien	Oxbows (1) Aquatic macro Logs and wood t pool depth		☐ Moder ☐ Spars	1, or 2 and AVERAG sive >75% (11) rate 25-75% (7) e 5-25% (3) v absent <5% (1)	E)
3 – Channel I	Morphology (20) (check only one per ca	ategory, OR two and	AVERAGE)	C	Channel Score:	11
Sinuosity High (4) Moderate (3) Low (2) None (1) Comments:	Development ☐ Excellent (☐ Good (5) ☐ Fair (3) ☐ Poor (1)	Channelization None (6) Recovered (4) Recovering (3) Recent or no rec		oility High (3) Moderate (2) Low (1)	Modifications/Othe	☐ Impound ☐ Islands	
4 – Riparian	Zone & Bank	Erosion (10 points	maximum)		F	Riparian Score:	7
Riparian width L R (per bank) □ □ Wide >50 ı	m (4) 10-50 m (3) 10m (2) w <5m (1)	am (for each category, che Erosion/Runoff-Floodplai L R (most predominan M Forest, swamp (3) M Shrub or old field M Residential, park, M Fenced pasture (1) Comments:	n Quality (past 10 t per bank) (2) new field (1)	0 ft Riparian) R Conserva Urban or Mining, c		ank Erosion R (per bank) ☐ None or little (3 ☑ Moderate (2)	•
5a – Pool/Gli	de Quality (1	2 points maximum)		Po	ol/Glide Score:	0
Max Pool Depth (check one)	Morphology (check on OR check two and AVI Pool width > riffle value Pool width < riffle value Pool width < riffle value Pool width < riffle value Pool width	l <u>y one,</u> ERAGE) width (2) width (1)	☐ Eddie	(1) erate (1)	ty (check all that app Torrential Interstitial Intermitter No pool (0	(-1) (-1) nt (-2)
5b – Riffle/Ri	un Quality (8)	(check only one per catego	ry, OR two and AVE	(RAGE)	Ri	ffle/Run Score:	0
Riffle/Run Depth Generally >10	(check one) cm, Max > 50 cm cm, Max < 50 cm 0 cm (1)	Riffle/Run S 	substrate eg. cobble, bould able – eg. pea grav e – eg. sand, grav	der (2) vel (1)	Riffle/Run Embedde		v (1)
6 – Gradient	(10 points m	aximum)				Gradient Score:	10
Average width:	2.1	Gradie	nt: 26.4 (ft/mile)		Area: 1.54 (square	

OWQ Biological Studies QHEI

Comments: No information on field data sheet



OWQ Biological Studies QHEI (Qualitative Habitat Evaluation Index)

Sample #	b	ioSample#	Stream Name	Location	
			sec1-s02r4	Section 1	of the I-69 corridor
Surveyor	Sample Date	County	Macro Sample Type		OUT Seems Too
MP, EC	8.4.05	Gibson	N/A	Complete	QHEI Score: 33
Impacts/Misc	cellaneous				
Major Suspected Ir	npacts (check all	that apply)	!	Miscellaneous QHEI Info	rmation
	☐ Riparia ☐ Flow A ☐ CSOs ☐ Mining ☐ Landfi	elization an Removal Alteration J	Subjective Rating (1-10): 8 Aesthetic Rating (1-10): 8 Canopy Cover (% Open): 20% General QHEI Notes:		is reach representative of stream? Yes
Pollution Impact	Comments:				



SITE NAME/LOCATON I-69 Section 1			<u>_</u>	
SITE NUMBER sec1-s04 RIVER BAS	SIN Highland Pigeon (#05140202)	DRAINAGE ARE	A (m1 ²) 0.49	
LENGTH OF		RIVER	RIVER	
STREAM REACH (ft) 200' LAT DATE 8/9/05 SCORER MP	LONG COMMENT	CODE	MILE	
NOTE: Complete All Items On This Form – Refe	er to "Field Evaluation Manual fo	or Ohio's PHWH Str	eams" for Instructions	
STREAM CHANNEL NONE / NATURAL CHAI	NNEL RECOVERED	RECOVERING	□ RECENT OR NO RECE	OVERY
MODIFICATIONS			}	
 SUBSTRATE (Estimate percent of every type of (Max of 32). Add total number of significant substr boxes A & B. 				HHEI
TYPE PLANS MARK TALL			PERCENT	Metric Points
☐ ☐ BLDR SLABS [16 pts] ☐ ☐ BOULDER (>256 mm) [16 pts]	🛛 🗌 SILT [3 pt] LEAF PACK/WOOD		40 F	Omto
☐ ☐ BEDROCK [16 pt]	FINE DETRITUS [3	pts]		bstrate
☐ ☐ COBBLE (65-256 mm) [12 pts] ☐ ☐ GRAVEL (2-64 mm) [9 pts]	☐ ☐ CLAY OR HARDPA☐ ☐ ☐ MUCK [0 pts]	.N [0 pt]	60 M	ax = 40
SAND (<2mm) [6 pts]	ARTIFICAL [3 pts]	_		5
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock				A+B
	(A) 3 TOTAL NUI	MBER OF (B)	2	
SUBSTRATE TYPES	SUBSTRAT		_	
			Po	ol Depth
2. MAXIMUM POOL DEPTH (Measure the maximum		200 ft) evaluation rea	ch at the time ofM	ax = 30
evaluation. Avoid plunge pools from road culverts of	or stormwater pipes)	(Check	ONLY one box)	0
>30 centimeters [20 pts]	>5 cm – 10 cm [15 pts	s]		
22.5 30 cm [30 pts] >10 - 22.5 cm [25 pts]	☐ <5 cm [5 pts] ☑ NO WATER OR MOIS	ST CHANNEL [0 pts]		
COMMENTS	MAXIMUM POOL DEPTH (c	entimeters)		ankfull
	<u> </u>	,	I	Width lax = 30
3. BANK FULL WIDTH (Measured as the average of	f 3-4 measurements)	(Check	ONLY one box)	
>4.0 meters (>13') [30 pts]	>1.0 m – 1.5 m (>3' 3"	' – 4' 8" [15 pts]	, i	20
>3.0 m – 4.0 m (>9' 7" – 13' [25 pts]	≤1.0 m (≤ 3' 3") [5 pts]			
COMMENTO	AVED A OF BANKELUL MUST	71. (4)	0.4	
COMMENTS	AVERAGE BANKFULL WIDT	H (meters)	2.4 m	
RIPARIAN ZONE AND FLOODPLAIN QUALITY	This information must also be com ☆NOTE: R	•	(R) as looking downstream	t
<u>RIPARIAN WIDTH</u>	FLOODPLAIN QUALITY			
LR (Per Bank) LR	(Most Predominant per Bank)	L R		
□ □ Wide >10 m	Mature Forest, Wetland		Conservation Tillage	
☐ Moderate 5 – 10 m ☐ Narrow < 5 m	Immature Forest, Shrub or Old Fiel Residential Park, New Field	ld 🗌 🗎	Urban or Industrial Open Pasture, Row Crop	
⊠ ⊠ None □ □	Fenced Pasture		Mining or Construction	
COMMENTS				
FLOW REGIME (At Time of Evaluation)	(Check ONLY one box)			
Stream FlowingSubsurface Flow with Isolated Pools (Interstitial)	☐ Moist Channel, Isolated) ☑ Dry Channel, No Water	,	ttent)	
) 🛛 Dry Channel, No Water	(Lhucineiai)	y	
COMMENTS				
SINUOSITY (Number of bends per 61 m (200 ft) of char		3.0		
0.5 1.5		>3		
STREAM GRADIENT ESTIMATE				
☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate	☐ Moderate (2 ft/100 ft)	☐ Moderate to S	evere) ft/100 ft)

ADDITIONAL STREAM INFORMATION (This information must also be completed)
QHEI PERFORMED? ☐ Yes ☒ No QHEI Score If Yes, Attach Completed QHEI Form DOWNSTREAM DESIGNATED USE(S)
☐ WWH Name Distance from Evaluated Stream
CWH Name Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIREWATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USQS Quadrangle Name Elberfield NRCS Soil Map Page 65 NRCS Soil Map Stream Order
County Gibson Township/City Greer Township
MISCELLANEOUS
Base Flow Conditions? 🛛 Yes 🗌 No Date of Last Precipitation 7.28.05 Quantity 0.1"
Photograph Information
Elevated Turbidity?
Were samples collected for water chemistry? ☐ Yes ☒ No Lab Number (Note lab sample no. or id and attach results)
Field Measures - Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream? Yes No If not, please explain
Additional comments/description of pollution impacts Row crop and road adjacent to stream
BIOTIC EVALUATION
Performed? Yes No (If Yes, record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed?
Frogs or Tadpoles Observed? Yes No Voucher? Yes Aquatic Macroinvertebrates Observed? Yes No Voucher? Yes No
Comments Regarding Biology
DRAWINGS AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed) Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location. FLOW
£ 05
Secretary and se
- Light select
65 /3 5

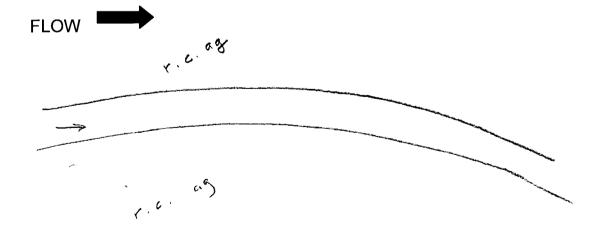
. T. %



SITE NAME/LOCATON I-69 Section 1				
SITE NUMBER Sec1-s07 RIVER BAS	IN Patoka (#05120209)	DRAINAGE ARE	` '	
LENGTH OF STREAM REACH (ft) 200' LAT	LONG	RIVER CODE	RIVER MILE	
DATE 8/4/05 SCORER JE	СОММ			
NOTE: Complete All Items On This Form - Refer	r to "Field Evaluation Manu	al for Ohio's PHWH Str	eams" for Instructions	
STREAM CHANNEL NONE / NATURAL CHAN	INEL RECOVERED	⊠ RECOVERING	☐ RECENT OR NO RECOVER	Y
MODIFICATIONS			1	
 SUBSTRATE (Estimate percent of every type of (Max of 32). Add total number of significant substrations boxes A & B. 			HHEI	
TYPE PERCEN			PERCENT Metric	
☐ ☐ BLDR SLABS [16 pts]	🛛 🗌 SILT [3 pt] 🔲 🔲 LEAF PACK/W	OODY DEBRIS [3 pts]	50 Points	•
☐ ☐ BEDROCK [16 pt] ☐ ☐ COBBLE (65-256 mm) [12 pts]	☐ ☐ FINE DETRITU		Substrat	
☐ ☐ GRAVEL (2-64 mm) [9 pts]	MUCK [0 pts]		5	Ť
☐ ☐ SAND (<2mm) [6 pts]	ARTIFICAL [3	ots] _	A+B	
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock				
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES		NUMBER OF (B) RATE TYPES	2	
SUBSTRATE TIPES	30831	RAIE ITPES	Pool Dep	sth
2. MAXIMUM POOL DEPTH (Measure the maximum	pool depth within the 61 me	ter (200 ft) evaluation read	May - 2	
evaluation. Avoid plunge pools from road culverts o			(ONLY one box)	
 >30 centimeters [20 pts] 22.5 − 30 cm [30 pts]	>5 cm - 10 cm [1 <5 cm [5 pts]	5 pts]		
>10 – 22.5 cm [25 pts]		MOIST CHANNEL [0 pts]		
COMMENTS	MAXIMUM POOL DEPT	H (centimeters)	0 cm Bankful Width Max = 3	
3. BANK FULL WIDTH (Measured as the average of	3-4 measurements)	(Check	(ONLY one box) 5	Ť
	>1.0 m − 1.5 m (> ≤1.0 m (≤ 3° 3") [5	3' 3" – 4' 8" [15 pts] 5 pts]		
COMMENTS <u>W=25', D=6"</u>	AVERAGE BANKFULL V	VIDTH (meters)	0.8 m	
RIPARIAN ZONE AND FLOODPLAIN QUALITY	This information must also be ☆ NOTI	•	(R) as looking downstream☆	
RIPARIAN WIDTH	FLOODPLAIN QUALITY			
L R (Per Bank) L R □ Wide >10 m □ □ Moderate 5 – 10 m □ □ Narrow <5 m	(Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Residential Park, New Field Fenced Pasture	LR	Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction	
FLOW REGIME (At Time of Evaluation)	(Check ONLY one bo	ox)		
Stream Flowing Subsurface Flow with Isolated Pools (Interstitial)	☐ Moist Channel, Isola	atéd Pools, No Flow (Intermi	ttent)	
COMMENTS				
SINUOSITY (Number of bends per 61 m (200 ft) of chan None	nel) (Check <i>ONLY</i> one b	ox) 3.0 >3		
STREAM GRADIENT ESTIMATE ☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate	☐ Moderate (2 ft/100 ft)	☐ Moderate to S	evere Severe (10 ft/100	ft)

IEI PERFORMED? ☐ Yes 🛛 No	QHEI Score		If Ye	es, Attach Comp	leted QHEI Form
DOWNSTREAM DESIGNATED	USE(S)				
7		Distance from Evaluate	ed Stream		
PPING: ATTACH COPIES OF MAPS	S, INCLUDING THE ENTIREWATERS	SHED AREA. CLEARLY MA	ARK THE SITE L	OCATION	
SQS Quadrangle Name Elberfield	NRCS Soil Map Page	78	_ NRCS Soil M	ap Stream Orde	г
ounty Gibson		Township/City Johnson	<u> </u>		
SCELLANEOUS					
ase Flow Conditions? 🛮 🖾 Yes 🔲 N	Date of Last Precipitation	7.28.05	Quantity _	0.10"	
notograph Information					·
evated Turbidity? ☐ Yes ☒ No	Canopy (% open)				
ere samples collected for water chemi				its)	
eld Measures - Temp (°C)the sampling reach representative of t	Dissolved Oxygen (mg/l)he stream? ⊠ Yes ☐ No If r		Cond	ductivity (µmhos	/cm)
dditional comments/description of pollu	ition impacts				<u>. </u>
OTIC EVALUATION					
(If Yes	, record all observations. Voucher coll r. Include appropriate field data sheet				d with the site ID
erformed?		alamanders Observed?	☐ Yes ☐ No	Voucher?	☐ Yes ☐ No
numbe	Voucher? ☐ Yes ☐ No Sa				
sh Observed? Yes No	□ Vos	roinvertebrates Observed?	☐ Yes ☐ No	Voucher?	☐ Yes ☐ No
sh Observed? Yes No rogs or Tadpoles Yes No bserved?	Youghor? ☐ Yes Aquatic Mac	roinvertebrates Observed?			☐ Yes ☐ No

DRAWINGS AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location.





			-
SITE NAME/LOCATON I-69 Section 1			
SITE NUMBER Sec1-s08 R	RIVER BASIN Patoka (#05120209)	DRAINAGE ARI	EA (m1²) 0.05
LENGTH OF		RIVER	RIVER
STREAM REACH (ft) 200'	LAT LONG	CODE	MILE
DATE 8/4/05 SCORER	Z JE COMM	IENTS	
NOTE: Complete All Items On This For	m – Refer to "Field Evaluation Manı	ial for Ohio's PHWH St	reams" for Instructions
STREAM CHANNEL NONE / NATUR	AL CHANNEL		□ RECENT OR NO RECOVERY
MODIFICATIONS			1
 SUBSTRATE (Estimate percent of ever (Max of 32). Add total number of significations and total number of significations. 	ry type of substrate present. Check On ant substrate types found (Max of 8). Fire	ILY <u>two</u> predominant substral metric score is sum of	HHEI
TYPE	PERCENT TYPE		PERCENT Metric
☐ ☐ BLDR SLABS [16 pts] ☐ BOULDER (>256 mm) [16 pts]	⊠ ☐ SILT [3 pt] ☐ ☐ LEAF PACK/V	OODY DEBRIS [3 pts]	50 Points
BEDROCK [16 pt]	FINE DETRIT		Substrate
☐ ☐ COBBLE (65-256 mm) [12 pts]	☐ CLAY OR HAP	RDPAN [0 pt]	50 Max = 40
☐ ☐ GRAVEL (2-64 mm) [9 pts] ☐ ☐ SAND (<2mm) [6 pts]		ntel _	5
COMMENTS Grassed waterway Total of Percentages of Bidr Slabs, Boulder, Cobble, Bedrock			A+B
SCORE OF TWO MOST PREDOMINA	ATE (A) 3 TOTAL	NUMBER OF (B)	2
SUBSTRATE TYPES		RATE TYPES	
			Pool Depth
2. MAXIMUM POOL DEPTH (Measure the	maximum pool depth within the 61 me	eter (200 ft) evaluation rea	nch at the time of Max = 30
evaluation. Avoid plunge pools from road	t culverts or stormwater pipes)	(Chec	k ONLY one box)
>30 centimeters [20 pts]	☐ >5 cm − 10 cm [5 pts]	
22.5 – 30 cm [30 pts] >10 – 22.5 cm [25 pts]	☐ <5 cm [5 pts] ☑ NO WATER OR	MOIST CHANNEL [0 pts]	
	M NO WATER OR	MOIST CHANNEL [U pts]	
COMMENTS	MAXIMUM POOL DEP	ΓΗ (centimeters)	0 cm Bankfull Width Max = 30
3. BANK FULL WIDTH (Measured as the a	verage of 3-4 measurements)	(Chec	k ONLY one box) 5
	≤1.0 m (≤ 3' 3")	>3' 3" – 4' 8" [15 pts] 5 pts]	•
COMMENTS 3'	AVERAGE BANKFULL	NIDTH (meters)	0.9 m
	This information must also be	-	1
RIPARIAN ZONE AND FLOODPLAIN QUALI	TY ☆NOT	E: River Left (L) and Righ	t (R) as looking downstream☆
<u>RIPARIAN WIDTH</u>	FLOODPLAIN QUALITY		
L R (Per Bank) ☐	L R (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Ol Residential Park, New Field	d Field	Conservation Tillage Urban or Industrial Open Pasture, Row Crop
☑ ☑ None	☐ ☐ Fenced Pasture		Mining or Construction
COMMENTS		·····	
FLOW REGIME (At Time of Evaluation) Stream Flowing Subsurface Flow with Isolated Pools (ated Pools, No Flow (Interm	nittent)
COMMENTS			
SINUOSITY (Number of bends per 61 m (200 ☑ None □ 1.0 □ 0.5 □ 1.5	(Check <i>ONLY</i> one l 2.0	3.0 >3	
STREAM GRADIENT ESTIMATE ☐ Flat (0.5 ft/100 ft) ☐ Flat to M	oderate	☐ Moderate to \$	Severe

ADDITIONAL STREAM INFORMATION (This information must also be completed)
QHEI PERFORMED? ☐ Yes ☑ No QHEI Score
DOWNSTREAM DESIGNATED USE(S)
☐ WWH Name Distance from Evaluated Stream ☐ CWH Name Distance from Evaluated Stream
☐ EWH Name ☐ Distance from Evaluated Stream ☐ Distance from Evalu
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIREWATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USQS Quadrangle Name Elberfield NRCS Soil Map Page 78 or 72 NRCS Soil Map Stream Order
County Gibson Township/City Johnson and Barton Townships
MISCELLANEOUS
Base Flow Conditions? 🛛 Yes 🗌 No Date of Last Precipitation 7.28.05 Quantity 0.10"
Photograph Information
Elevated Turbidity?
Were samples collected for water chemistry?
Field Measures - Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream?
Additional comments/description of pollution impacts
BIOTIC EVALUATION
(If Ves, record all observations, Moucher collections entired, NOTE; all veucher samples must be labeled with the site ID.
Performed? Yes No number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed?
Frogs or Tadpoles Observed? Yes No Voucher? Yes Aquatic Macroinvertebrates Observed? Yes No Voucher? Yes No
Comments Regarding Biology
DRAMINGS AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)
DRAWINGS AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed) Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location.
FLOW
r. c vij
C Weedy
e veg.
5 / -
5
C Weedy veg.
r.c. 93



SITE NAME/LOCATON			
SITE NUMBER Sec1-s09 RIVER BAS	IN Patoka #05120209	DRAINAGE ARE	` ′
LENGTH OF _ STREAM REACH (ft) 200' LAT	LONG	RIVER CODE	RIVER MILE
DATE 8/4/05 SCORER JE	СОММ	ENTS	
NOTE: Complete All Items On This Form - Refer	to "Field Evaluation Manu	al for Ohio's PHWH Str	eams" for Instructions
STREAM CHANNEL NONE / NATURAL CHAN	INEL RECOVERED		☑ RECENT OR NO RECOVERY
MODIFICATIONS			1
 SUBSTRATE (Estimate percent of every type of (Max of 32). Add total number of significant substrations as the boxes A & B. 			HHEI
TYPE PERCEN ☐ ☐ BLDR SLABS [16 pts]	<u>T TYPE</u> ⊠	•	PERCENT Metric Points
BOULDER (>256 mm) [16 pts]	LEAF PACK/W	OODY DEBRIS [3 pts]	Substrate
☐ ☐ COBBLE (65-256 mm) [12 pts]	□ □ FINE DETRITU ⊠ □ CLAY OR HAR		30 Max = 40
GRAVEL (2-64 mm) [9 pts] SAND (<2mm) [6 pts]			5
COMMENTS Grassed ditch Total of Percentages of		_	A+B
Bidr Slabs, Boulder, Cobble, Bedrock			
SCORE OF TWO MOST PREDOMINATE (SUBSTRATE TYPES		NUMBER OF (B) RATE TYPES	2
SOBSTRAIL TIFES	30831	NATE TIPES	Pool Depth
2. MAXIMUM POOL DEPTH (Measure the maximum			ch at the time of Max = 30
evaluation. Avoid plunge pools from road culverts of	_ '' '	`	ONLY one box)
 >30 centimeters [20 pts] 22.5 – 30 cm [30 pts] 	>5 cm - 10 cm [1	• •	
>10 – 22.5 cm [25 pts]		MOIST CHANNEL [0 pts]	
COMMENTS	MAXIMUM POOL DEPT	H (centimeters)	0 cm Bankfull
			Width Max = 30
3. BANK FULL WIDTH (Measured as the average of	•	,	ONLY one box) 5
 >4.0 meters (>13') [30 pts] >3.0 m - 4.0 m (>9' 7" - 13' [25 pts] 	∐ >1.0 m – 1.5 m (> ⊠ ≤1.0 m (≤ 3' 3") [{	:3' 3" — 4' 8" [15 pts] 5 pts]	
>1.5 m – 3.0 m (>9' 7" – 4' 8") [20 pts]			
COMMENTS 3'	AVERAGE BANKFULL V	VIDTH (meters)	0.9 m
	This information must also be	,	
RIPARIAN ZONE AND FLOODPLAIN QUALITY			(R) as looking downstream☆
RIPARIAN WIDTH	FLOODPLAIN QUALITY		
LR (Per Bank) LR □ □ Wide >10 m □ □	(Most Predominant per Bank) Mature Forest, Wetland	L R □ □	Conservation Tillage
Moderate 5 – 10 m	Immature Forest, Shrub or Ok	l Field	Urban or Industrial
☐	Residential Park, New Field Fenced Pasture		Open Pasture, Row Crop Mining or Construction
COMMENTS			
FLOW REGIME (At Time of Evaluation)	(Check ONLY one bo		·
Stream FlowingSubsurface Flow with Isolated Pools (Interstitial)		ated Pools, No Flow (Intermi ater (Ephemeral)	ttent)
COMMENTS	· ·	,	
SINUOSITY (Number of bends per 61 m (200 ft) of chan		•	
✓ None ☐ 1.0 ☐ 0.5 ☐ 1.5	□ 2.0 □ □ 2.5 □	3.0 >3	
STREAM GRADIENT ESTIMATE			
☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate	☐ Moderate (2 ft/100 ft)	☐ Moderate to S	evere Severe (10 ft/100 ft)

		•	ition must also be cor	• '	ut V -	a Attack Carre	lated OUT! Fa
IEI PERFORMED?			ore		іт Үе	s, Attach Comp	leted QHEI Form
	EAM DESIGNATEI	` '		Distance from Eval	ated Streem		
WWH Name CWH Name							
EWH Name				Distance from Evalu			
		-		SHED AREA. CLEARLY			
SQS Quadrangle N	lame <u>Elberfield</u>		NRCS Soil Map Page	72	NRCS Soil Ma	p Stream Order	
ounty <u>Gibson</u>				Township/City Johns	on		
CELLANEOUS							
se Flow Condition	s? ⊠ Yes □ N	o Date	e of Last Precipitation	7.28.05	Quantity(0.10"	
iotograph Informati	ion						
evated Turbidity?	☐ Yes 🖾 No	Can	opy (% open)	·		*	
ere samples collec	ted for water chem	istry?	res ⊠ No Lab Num	ber (Note lab sample no. o	r id and attach result	s)	
·	/° 0\					•	(cm)
eld Measures - Ter	np (C)	Dissolved		pH (S.U.)			
the sampling reacl	h representative of	the stream?	⊠ Yes □ No If	not, please explain	-		
							-
Iditional comments	s/description of poll	ution impacts					
TIC EVALUATION					• • •		
		rocord all ob	convetions Vouchor co	llections optional. NOTE:	all vouchor camples	must be labeled	d with the cite ID
erformed? 🔲 Yo				ets from the Primary Heady			2 WILL LIFE SILE ID
sh Observed?	☐ Yes ☐ No	Voucher?	☐ Yes ☐ No	Salamanders Observed?	☐ Yes ☐ No	Voucher?	☐ Yes ☐ No
ogs or Tadpoles			☐ Yes Aquetic Ma				
oserved?	☐ Yes ☐ No	Voucher?	□ No Aquatic Ma	croinvertebrates Observed	? Yes No	Voucher?	☐ Yes ☐ N
omments Regardir	ng Biology						
			· · <u>-</u>				
	DRAWIN!	GS AND NARI	RATIVE DESCRIPTION	N OF STREAM REACH (T	his must be comple	eted)	
Include im				site evaluation and a narr			ocation.
LOW =							
LOVV	•	1	c				
		,	c. 43				
					E-		
101			* · · · · · · · · · · · · · · · · · · ·			-	
CR	-		The second secon		K		

5) Narro	~
5	The state of the s	generalization and the control of decidents	and the second s	and a figure grown of the first one of the first of the f	ور ومصوب فالمصافح الدارات والمتردي باليوار والمتالم الماكات	grass	a togota
	The same of the sa	19			¥	wate.	rway
0	The same of the sa	The same	*** **********************************	**************************************	,		,
E	An American Co. P.				en e	NEG and a control of	
			r,c. aq				
, i			r,c. ag				



SITE NAME/LOCATON I-69 Section 1			
SITE NUMBER Sec1-s10 RIVER BA	ASIN Patoka (#05120209)	DRAINAGE AR	EA (m1²) 0.01
LENGTH OF		RIVER	RIVER
STREAM REACH (ft) 200' LAT DATE 8/4/05 SCORER JE	LONG COMME	CODE	MILE
NOTE: Complete All Items On This Form – Ref	· · · · · · · · · · · · · · · · · · ·		roams" for Instructions
STREAM CHANNEL NONE / NATURAL CHA			RECENT OR NO RECOVERY
MODIFICATIONS	WINEE TEOOPERED	_ REGOVERING	NEGENT ON NO REGOVERY
SUBSTRATE (Estimate percent of every type of the state of the sta	of substrate present. Check ONI	V two predominant subst	rate TVPE hoves
(Max of 32). Add total number of significant subs boxes A & B.			HHEI
TYPE PERCE ☐ ☐ BLDR SLABS [16 pts]			PERCENT Metric
☐ ☐ BOULDER (>256 mm) [16 pts]	☐☐ LEAF PACK/W	OODY DEBRIS [3 pts]	
☐ ☐ BEDROCK [16 pt]	☐☐☐ FINE DETRITUS ☐☐☐ CLAY OR HARI		50 Substrate Max = 40
GRAVEL (2-64 mm) [9 pts]	MUCK [0 pts]		5
SAND (<2mm) [6 pts]	ARTIFICAL [3 p	tsj _	A+B
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock			
SCORE OF TWO MOST PREDOMINATE	(A) 3 TOTAL I	NUMBER OF (B)	2
SUBSTRATE TYPES	SUBSTR	RATE TYPES	
a MANIMUM DOOL DEDTIL (Manages the region)		(000 ft)	Pool Depth Max = 30
MAXIMUM POOL DEPTH (Measure the maximu evaluation. Avoid plunge pools from road culverts	i m pool depth within the 61 met or stormwater pipes)		ck ONLY one box)
>30 centimeters [20 pts]	□ >5 cm – 10 cm [15	pts]	
22.5 – 30 cm [30 pts] >10 – 22.5 cm [25 pts]	☐ <5 cm [5 pts] ☑ NO WATER OR M	OIST CHANNEL [0 pts]	
COMMENTS	MAXIMUM POOL DEPTI	H (centimeters)	0 cm Bankfull Width
			Max = 30
3. BANK FULL WIDTH (Measured as the average of		•	sk ONLY one box) 5
☐ >4.0 meters (>13') [30 pts] ☐ >3.0 m - 4.0 m (>9' 7" - 13' [25 pts]	[_] >1.0 m – 1.5 m (>3	3' 3" – 4' 8" [15 pts] pts]	
>1.5 m – 3.0 m (>9' 7" – 4' 8") [20 pts]	_ , , , ,	-	
COMMENTS W=1', D=6"	AVERAGE BANKFULL W	IDTH (meters)	0.3 m
	This information must also be	completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY			it (R) as looking downstream☆
RIPARIAN WIDTH	FLOODPLAIN QUALITY		
L R (Per Bank) L R □ □ Wide >10 m □ □	(Most Predominant per Bank) Mature Forest, Wetland	L R	Conservation Tillage
Moderate 5 – 10 m	Immature Forest, Shrub or Old	Field	Urban or Industrial
□ □ Narrow <5 m	Residential Park, New Field Fenced Pasture		Open Pasture, Row Crop Mining or Construction
COMMENTS			
FLOW REGIME (At Time of Evaluation)	(Check ONLY one bo		
 Stream Flowing Subsurface Flow with Isolated Pools (Interstitia 		ted Pools, No Flow (Intern ter (Ephemeral)	nittent)
COMMENTS	. = ,	· · · · · · · · · · · · · · · · · · ·	·
SINUOSITY (Number of bends per 61 m (200 ft) of cha	annel) (Check ONLY one bo)X)	
☑ None ☐ 1.0 ☐ 0.5 ☐ 1.5	☐ 2.0 ☐ ☐ 2.5 ☐	3.0 >3	
STREAM GRADIENT ESTIMATE		•	
☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate	☐ Moderate (2 ft/100 ft)	☐ Moderate to	Severe Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This information must also be com	•	
QHEI PERFORMED? ☐ Yes ☒ No QHEI Score		If Yes, Attach Completed QHEI Form
DOWNSTREAM DESIGNATED USE(S)		
☐ WWH Name ☐ CWH Name ☐ EWH Name	Distance from Evaluated Sti Distance from Evaluated Sti Distance from Evaluated Sti	ream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIREWATERS	HED AREA. CLEARLY MARK	THE SITE LOCATION
USQS Quadrangle Name Elberfield NRCS Soil Map Page	72 N	RCS Soil Map Stream Order
County Gibson	Township/CityUnion	
MISCELLANEOUS		
Base Flow Conditions? ☐ Yes ☐ No Date of Last Precipitation	7.28.05	Quantity 0.10"
Photograph Information		
Elevated Turbidity? ☐ Yes ☒ No Canopy (% open) 100%		-
	er (Note lab sample no. or id and	attach results)
·	•	•
Field Measures - Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.)	Conductivity (µmhos/cm)
Is the sampling reach representative of the stream? $\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$	ot, please explain	
Additional comments/description of pollution impacts	•	
Additional comments/description of politicion impacts		
BIOTIC EVALUATION		
Performed? ☐ Yes ☒ No		
Fish Observed? ☐ Yes ☐ No Voucher? ☐ Yes ☐ No Sa	iamanders Observed?	es □ No Voucher? □ Yes □ No
Frogs or Tadpoles	oinvertebrates Observed?	Yes ☐ No Voucher? ☐ Yes ☐ No
Comments Regarding Biology		
DRAWINGS AND NARRATIVE DESCRIPTION	OF STREAM REACH (This mus	st be completed)
Include important landmarks and other features of interest for si	e evaluation and a narrative de	escription of the stream's location.
FLOW -		
Y.C. 03		union auditionismonamin
** The Property of the Control of th	ĸ	
	- Mari Mari Mari ya Papara antish ya mati Ma Nakila Baraya diki ja kana sinasiya na kana kana Mari diki ya mata	

r.c. ag

المحجوا									
17 3 VV	0	WQ Biological S	tudies QHEI (Qualitati	ve Habitat Eva	luation Index			
Sample #	bic		Stream Name		Location				
			Sec1-s11		Section 1	of proposed I-69 co	rridor		
Surveyor MP, EC	Sample Date August 4, 2005	County Gibson	Macro Sample N/A	Туре		QHEI Score:	23		
1 – Substrate (20 points maximum) Substrate Score: 7									
Check 1	Predominant Po	ol & 1 Predominant R	<u>iffle</u>	Substrat	te Quality (check only	1, or check 2 and A	VERAGE)		
Check all that Predominant PR Bldrs/Sla Boulders Cobble (t	Present P R R R R R R R R R	P=Pool, R=R Predominant PR Hardpan (4) Detritus (3) Muck (2) Silt (2) Sludge (1) Artificial (0)	Present PR □ □ □ □ □ □	⊠ Si □ Si	☐ Sand Is (0) ☐ Rip/R	pan (0)	≆ (-2) • (-1)		
NOTE: Ignore slu sources; score ba			substrates present ents:	(2)					
2 - Instream Type (check ALL: Undercut bank Overhanging vomages of the contract of the contr	that apply) ks (1) vegetation (1) low water) (1)	Channelization	category, OR two and .	y debris (1) AVERAGE)	Amount (check only	sive >75% (11) rate 25-75% (7) e 5-25% (3) r absent <5% (1) Channel Score:	4		
☐ High (4) ☐ Moderate (3) ☐ Low (2) ☑ None (1) Comments:	☐ Good (5) ☐ Fair (3) ☑ Poor (1)	Recovered (4) Recovering (3) Recent or no r	□ N ⊠ L	lgn (3) loderate (2) ow (1)	☐ Relocation ☐ Canopy remove ☐ Dredging	☐ Islands			
<u>4 – Riparian i</u>	Zo <u>ne & Bank</u>	Erosion (10 point	ts maximum)		F	Riparian Score:	2		
Riparian width L R (per bank) ☐ ☐ Wide >50 r	m (4) 10-50 m (3) 10m (2) ow <5m (1)	mm (for each category, c Erosion/Runoff-Floodpla L R (most predomina ☐ Forest, swamp (3 ☐ Shrub or old field ☐ Residential, park ☐ Fenced pasture (Comments:	ain Quality (past 100 ont per bank) L B) I (2) I, new field (1)	ft Riparian R Conserva Urban or Mining, c		ank Erosion R (per bank) ☑ None or little (☑ Moderate (2)	. •		
5a – Pool/Gli	de Quality (1:	2 points maximun	n)	 	Po	ol/Glide Score:	0		
Max Pool Depth (c	check one)	Morphology (check of OR check two and A) Pool width > riffle Pool width < riffle Pool width < riffle	verage) width (2) width (1)	☐ Eddi ☐ Fast	n/Riffle Current Veloci es (1) (1) erate (1)		ply) (-1) i (-1) nt (-2)		

5b - Riffle/Run Quality (8) (check only one per category, OR two and AVERAGE) Riffle/Run Score: 0 Riffle/Run Embeddedness Extensive (-1) Moderate (0) Normal/Low None (2) No riffle (0) Riffle/Run Depth (check one) Generally >10 cm, Max > 5 Riffle/Run Substrate Generally >10 cm, Max > 50 cm (4) Normal/Low (1) Stable - eg. cobble, boulder (2) ☐ Mod. stable – eg. pea gravel (1)☐ Unstable – eg. sand, gravel (0) Generally >10 cm, Max < 50 cm (3) Generally 5-10 cm (1) ☐ Generally <5 cm (riffle = 0) Comments: No riffle/run complexes 6 - Gradient (10 points maximum) **Gradient Score:** 10

Gradient: 26.4 (ft/mile)

Average width: 1.3

Comments: No information on field data sheet

Drainage Area: 5.77 (square miles)



OWQ Biological Studies QHEI (Qualitative Habitat Evaluation Index)

Sample #	bio	Sample #	Stream Name		Location		
			Sec1-s11		Section 1	of the I-69 corrido	<u> </u>
Surveyor	Sample Date	County	ounty Macro Sample Type		Habitat	OUE! O	
MP, EC	August 4, 2005	August 4, 2005 Gibson N/A Co		Com	plete	QHEI Score:	: 23
Impacts/Miso	cellaneous						
Major Suspected In	npacts (check all t	nat apply)		Miscellaneous	s QHEI Infor	mation	
│ None │ Industrial │ WWTP │ Agricultural │ Livestock │ Silviculture │ Construction │ Urban Runoff	☐ Flow AI ☐ CSOs ☐ Mining ☐ Landfill	lization n Removal teration	Aesthetic Rating (1-10):	100%	% Riffle: % Run: % Glide: % Pool:		ach esentative tream?
Pollution Impact	Comments:						

UJEJVI	O	WQ Biolog	ical Studies QHEI	(Qualitat	ive Habitat Eval	uation Index	
Sample #		Sample#	Stream Name		Location		
Sample #	Dio	Sample #	Sec1-s12			of proposed 1-69 co	rridor
Surveyor	Sample Date August 4, 2005	County Gibson	Macro Sampl	е Туре		QHEI Score:	19
1 – Substrate	(20 points m	aximum)	· · · · · · · · · · · · · · · · · · ·		·	bstrate Score:	7
Check all tha Predominant PR Bidrs/Sia Boulders Cobble (6) Sand (6) Bedrock NOTE: Ignore slu	Present P R R R R R R R R R	P=Pc	ool, R=Riffle nt <u>Present</u> P R rdpan (4)	Limesto Tills (1) Wetland Silt C Si Si Si	☐ Sand is (0) ☐ Rip/R	onigin oan (0)	acustrine (0) hale (-1) oal fines (-2) ess e (-2)
sources; score ba	sed on natural su	bstrates	Comments:		-		
Type (check ALL Undercut bani Overhanging Shallows (in s	ks (1) vegetation (1) llow water) (1)	Deep pools Rootwads (' Boulders (1) Comments: N	(2)		Amount (check only	sive >75% (11) ate 25-75% (7) e 5-25% (3) r absent <5% (1)	
Sinuosity High (4) Moderate (3) Low (2) None (1) Comments:	Morphology () Development ☐ Excellent () ☐ Good (5) ☐ Fair (3) ☑ Poor (1)	Channeliz None Recov	(6)	d AVERAGE) billity High (3) Moderate (2) Low (1)	Modifications/Othe ⊠ Snagging □ Relocation ⊠ Canopy remova ⊠ Dredging	☐ Impound ☐ Islands	
4 – Riparian	Zone & Bank	Erosion (1	points maximum)		R	Riparian Score:	4
Riparian width L R (per bank)	m (4) 10-50 m (3) 10m (2) ow <5m (1)	Erosion/Runoff L R <u>(most pr</u> □ □ Forest, : □ □ Shrub o	tegory, check only one per -Floodplain Quality (past 10 edominant per bank) swamp (3) r old field (2) tial, park, new field (1) pasture (1)	00 ft Riparian) R] ☐ Conserv] ☐ Urban o] ☐ Mining, e	Bi L ation tillage (1) r industrial (0)	ank Erosion R (per bank)	• •
5a – Pool/Gli	ide Quality (1	2 points ma	ıximum)		Poe	ol/Glide Score:	0
Max Pool Depth (OR check tw ☐ Pool wid ☐ Pool wid	(check only one, ro and AVERAGE) th > riffle width (2) th = riffle width (1) th < riffle width (0) pols	☐ Edd ☐ Fasi ☐ Mod	in/Riffle Current Velocities (1) i (1) i (1) ierate (1) v (1)	ty (check all that ap	(-1) (-1) nt (-2)
Riffle/Run Depth Generally >10	(check one) cm, Max > 50 cm cm, Max < 50 cm	(4) [(3)	per category, OR two and AVi iffle/Run Substrate Stable – eg. cobble, boul Mod. stable – eg. pea gra Unstable – eg. sand, grav	der (2) vel (1)	Riffle/Run Embeddo Extensive (-1) Moderate (0)	ffle/Run Score: edness Normal/Lor None (2) No riffle (0)	

Comments: No riffie/run complexes

☐ Generally <5 cm (riffle = 0)

Average width: 2.5 m

6 - Gradient (10 points maximum)

Comments: Any site with a gradient >40 ft/mile is assigned a score of "4"

Gradient: 61 (ft/mile)

OWQ Biological Studies QHEI

4

Gradient Score:

Drainage Area: 98.2 (square miles)



OWQ Biological Studies QHEI (Qualitative Habitat Evaluation Index)

Sample #	bic	Sample #		ream Name		Location Section 1	of the I-69 corrid	ог
Surveyor	Sample Date August 4, 2005	County Gibson		Macro Sample Type	-1	Habitat mplete	QHEI Score	
Impacts/Mise	cellaneous							
Major Suspected I	npacts (check all t	hat apply)		<u>M</u>	liscellaneou	ıs QHEI Infori	mation	
□ None □ Industrial □ WWTP ☑ Agricultural □ Livestock □ Silviculture □ Construction □ Urban Runoff	☐ Riparia☐ Flow Al☐ CSOs☐ Mining☐ Landfill	elization n Removal teration	Aes Can	thetic Rating (1-10): 4 thetic Rating (1-10): 4 opy Cover (% Open): 100% eral QHEI Notes:	6	% Riffle: % Run: % Glide: 1 % Pool:	repi	each resentative stream?
Pollution Impact	Comments:		1					

				· January and January and American	177 T S C 18 C 2 C 2 C 2 C 2 C 2 C 2 C 2 C 2 C 2 C		
BEW	0	WQ Biolog	ical Studies QHEI	(Qualitat	ive Habitat Eva	luation Index)
Sample #	bi	oSample #	Stream Name		Location		
			sec1-s13 r2		Section 1	of the I-69 Corridor	
Surveyor Joe Exl	Sample Date 8.4.05	County Gibson	Macro Sample N/A	Туре	⊠ Habitat Complete	QHEI Score:	27
1 – Substrate	(20 points m	naximum)			Su	bstrate Score:	10
Check 1 F	Predominant Po	ol & 1 Predom	inant Riffle	Substra	te Quality (check only	1, or check 2 and A	VERAGE)
Check all that			ol, R=Riffle		Substrate		
Predominant P R	Present PR	Predominant PR	<u>Present</u> P R	│	` '	` ` ' =	acustrine (0) hale (-1)
🔲 🛄 Bldrs/Sla	bs (10) 🔲 🔲		dpan (4) 🔲 🗖	☐ Wetland	ls (0) 🔲 Rip/F	tap (0) 🐪 🔲 C	oal fines (-2)
☐ ☐ Boulders	• = =		ritus (3) □ ⊠ :k (2) □ □	Silt C	<u>over</u> It heavy (-2)	<u>Embeddedne</u> ☐ Extensive	
☐ ☐ Gravel (7) 🗆 🗆	□ □ Silt		│ □ Si	It moderate (-1)		· (-1)
⊠	(5)		dge (1) 🔲 🗌 ficial (0) 🔲 🔲		it normal (0) it free (1)	Low/Non	
NOTE: Ignore slu			☐ >4 substrates present	L			
sources; score ba			Comments:	. (2)			
2 – Instream	Cover (20 po	ints maximu	ım)		Instrean	n Cover Score:	1
Type (check ALL 1					Amount (check only	1, or 2 and AVERA	GE)
☐ Undercut bank☐ Overhanging v		Deep pools ()Rootwads (1)		nhidoe (1)		sive >75% (11) ate 25-75% (7)	
☐ Shallows (in s	low water) (1)	☐ Boulders (1)	☐ Logs and wood		☐ Spars	e 5-25% (3) `´	
Rootmats (1)		Comments: no	instream cover		Nearly	absent <5% (1)	
<u>3 – Channel I</u>	Morphology ((check only	one per category, OR two and	AVERAGE)	C	Channel Score:	7
Sinuosity	Development Excellent (Channeliza		ility	Modifications/Othe		
☐ High (4) ☐ Moderate (3)	Good (5)	Recove	ered (4) 🔯 I	High (3) Moderate (2)	☐ Snagging☐ Relocation	☐ Impound ☐ Islands	ı
☐ Low (2) ⊠ None (1)	☐ Fair (3) ☑ Poor (1)		ering (3)	Low (1)	☑ Canopy remova☑ Dredging	al 🔲 Leveed 🔲 Bank sh	anina
Comments:	FOOT (1)		tor no recovery (1)		• •	nel modifications	aping
4 – Riparian	Zone & Bank	Erosion (10	points maximum)		F	Riparian Score:	5
Left/Right banks I			egory, check only one per l		per bank and AVERAG	E)	
Riparian width L R (per bank)			Floodplain Quality (past 10 edominant per bank) L	<u>0 ft Riparian)</u> R	<u>B</u>	ank Erosion R (per bank)	
☐ ☐ Wide >50 r			wamp (3)		ation tillage (1)	None or little	(3)
		□ □ Shrub or □ □ Resident	old field (2) \Box ial, park, new field (1) \Box		r industrial (0)		(4)
🔲 🔲 Very narro	• •	Fence <u>d p</u>		=	sture/rowcrop (0)		(')
☐ ☐ None (0)		Comments:					
5a – Pool/Gli	de Quality (1	2 points ma	<u>ximum)</u>		Ро	ol/Glide Score:	2
Max Pool Depth (c	check one)		check only one.	_	n/Riffle Current Veloci		
□ >1 m (6) □ 0.7-1 m (4)			o and AVERAGE) h > riffle width (2)	∐ Edd ☐ Fast	ies (1) : (1)	☐ Torrential☐ Interstitia	
0.4-0.7 m (2)			h = riffle width (1)	☐ Mod	erate (1)	Intermitte	nt (-2)
⊠ 0.2-0.4 m (1) □ <0.2 m (pool =	: 0) Cor		h < riffle width (0) ed pools, no flow	☐ Slov	V (1)	☐ No pool (<u>n</u>
					_		

<u> 6 – Gradient (10 points maximum)</u>		Gradient Score: 2	
Average width: 3 m	Gradient: 0.01 (ft/mile)	Drainage Area: 1.46 (square miles)	Ξ

Stable - eg. cobble, boulder (2) ☐ Mod. stable – eg. pea gravel (1) ☑ Unstable – eg. sand, gravel (0)

Riffle/Run Substrate

Comments: intermittent stream

5b - Riffle/Run Quality (8) (check only one per category, OR two and AVERAGE)

Riffle/Run Depth (check one)
Generally >10 cm, Max > 50 cm (4)
Generally >10 cm, Max < 50 cm (3)

Generally 5-10 cm (1) ⊠ Generally <5 cm (riffle = 0)
</p>

Comments:

Riffle/Run Score:

Riffle/Run Embeddedness

Extensive (-1) Normal/Low (1)

Moderate (0) None (2)

No riffle (0)



OWQ Biological Studies QHEI (Qualitative Habitat Evaluation Index)

Sample #	bi	ioSample#	Stream Name	Location Section 1	of the I-69 corridor
Surveyor Joe Exi	Sample Date	County Gibson	Macro Sample Type		QHEI Score: 27
Impacts/Mise					
Major Suspected I	mpacts (check all	that apply)		Miscellaneous QHEI Infor	mation
□ None □ Industrial □ WWTP ☑ Agricultural □ Livestock □ Silviculture □ Construction □ Urban Runoff	☐ Flow A ☐ CSOs ☐ Mining ☐ Landfi	elization an Removal Ateration	Subjective Rating (1-10): Aesthetic Rating (1-10): Canopy Cover (% Open):	3 % Run:	is reach representative of stream? yes
Pollution Impact	_		General QHEI Notes:		



Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3):

25

SITE NAME/LOCATON I-69 Section 1 SITE NUMBER sec1-s14 RIVER BASIN Patoka (#05120209) DRAINAGE AREA (m12) RIVER LENGTH OF RIVER STREAM REACH (ft) CODE MILE SCORER DATE 8/9/05 JE NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions STREAM CHANNEL | NONE / NATURAL CHANNEL ☐ RECOVERING ☐ RECOVERED **MODIFICATIONS** SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of HHEI boxes A & B. Metric **PERCENT Points** BLDR SLABS [16 pts] SILT [3 pt] BOULDER (>256 mm) [16 pts] LEAF PACK/WOODY DEBRIS [3 pts] FINE DETRITUS [3 pts] BEDROCK [16 pt] **Substrate** COBBLE (65-256 mm) [12 pts] $\overline{\boxtimes}$ CLAY OR HARDPAN [0 pt] 75 Max = 40GRAVEL (2-64 mm) [9 pts] MUCK [0 pts] 5 SAND (<2mm) [6 pts] ARTIFICAL [3 pts] A+B Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE (B) **TOTAL NUMBER OF** SUBSTRATE TYPES **SUBSTRATE TYPES Pool Depth** Max = 30MAXIMUM POOL DEPTH (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or stormwater pipes) (Check ONLY one box) >30 centimeters [20 pts] >5 cm - 10 cm [15 pts] 22.5 - 30 cm [30 pts] <5 cm [5 pts] 茵 NO WATER OR MOIST CHANNEL [0 pts] >10 - 22.5 cm [25 pts] Bankfull COMMENTS MAXIMUM POOL DEPTH (centimeters) 0 Width Max = 30BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box) 20 >4.0 meters (>13') [30 pts] >1.0 m - 1.5 m (>3' 3" - 4' 8" [15 pts] >3.0 m - 4.0 m (>9' 7" - 13' [25 pts] ≤1.0 m (≤ 3' 3") [5 pts] >1.5 m - 3.0 m (>9' 7" - 4' 8") [20 pts] COMMENTS 6', 6', 4.5' AVERAGE BANKFULL WIDTH (meters) This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Most Predominant per Bank) (Per Bank) Wide >10 m Mature Forest, Wetland Conservation Tillage Moderate 5 - 10 m Immature Forest, Shrub or Old Field Urban or Industrial Narrow <5 m Residential Park, New Field Open Pasture, Row Crop $\boxtimes \boxtimes$ None Fenced Pasture Mining or Construction COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box) Moist Channel, Isolated Pools, No Flow (Intermittent) Stream Flowing 茵 Subsurface Flow with Isolated Pools (Interstitial) Dry Channel, No Water (Ephemeral) SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box) \boxtimes None 1.0 2.0 3.0 1.5 STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Severe (10 ft/100 ft) Moderate to Severe

	nation must also be comp				OUELE
	Score		If Ye	s, Attach Comp	leted QHEI Form
DOWNSTREAM DESIGNATED USE(S)		Distance from Evolvet	ad Cina am		
		Distance form Freehold	ed Stream		
APPING: ATTACH COPIES OF MAPS, INCLUDI	NG THE ENTIREWATERS	IED AREA. CLEARLY M	ARK THE SITE L	OCATION	
JSQS Quadrangle NameElberfield	NRCS Soil Map Page	64	NRCS Soil Ma	ap Stream Orde	г
County Gibson		Township/City Barton			
ISCELLANEOUS					
Base Flow Conditions? ⊠ Yes ☐ No D	ate of Last Precipitation	7.28.05	Quantity	0.10"	
Photograph Information					
Elevated Turbidity? ☐ Yes ☒ No C	anopy (% open)				
	Yes 🛛 No Lab Numbe			to)	
·	_	` '		•	
Field Measures - Temp (°C) Dissolv	red Oxygen (mg/l)	pH (S.U.)	Cond	luctivity (µmhos	/cm)
s the sampling reach representative of the stream?	⊠ Yes ☐ No If no	t, please explain			
				······································	-
Additional comments/description of pollution impacts					
OTIC EVALUATION					
	bservations. Voucher colle ppropriate field data sheets				d with the site ID
	☐ Yes ☐ No Sal	amanders Observed?	☐ Yes ☐ No	Voucher?	☐ Yes ☐ N
Fish Observed?					
Frogs or Tadpoles Ves No. Voucher?	☐ Yes ☐ No Aquatic Macro	invertebrates Observed?	☐ Yes ☐ No	Voucher?	☐ Yes ☐ N
Erans or Tadpalos	☐ No Aquatic Macro				☐ Yes ☐ No

FLOW -



SITE NAME/LOCATON I-69 Section 1					
	RIVER BASIN Patoka	(#05120209)	DRAINAGE ARE	· ′	
LENGTH OF STREAM REACH (ft) 200'	LAT ————	LONG LONG	RIVER CODE	RIVE MILE	
DATE 8/10/05 SCORE	R MP	COMMENT	S West side of 650,	, north of 1-17, west	of 1-16b
NOTE: Complete All Items On This For	rm – Refer to "Field E	valuation Manual fo	or Ohio's PHWH Str	eams" for instruc	tions
STREAM CHANNEL NONE / NATUR	RAL CHANNEL 🔲	RECOVERED [RECOVERING	⊠ RECENT OR	NO RECOVERY
MODIFICATIONS					1
 SUBSTRATE (Estimate percent of eve (Max of 32). Add total number of significations A & B. 	cant substrate types found				HHEI Metric
TYPE □ BLDR SLABS [16 pts] □ BOULDER (>256 mm) [16 pts] □ BEDROCK [16 pt] □ COBBLE (65-256 mm) [12 pts] □ GRAVEL (2-64 mm) [9 pts] □ SAND (<2mm) [6 pts]	PERCENT TYPE	SILT [3 pt] LEAF PACK/WOOD FINE DETRITUS [3 CLAY OR HARDPA MUCK [0 pts] ARTIFICAL [3 pts]	pts]	<u>PERCENT</u> 75	Points Substrate Max = 40 5 A+B
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock					
SCORE OF TWO MOST PREDOMIN SUBSTRATE TYPES	ATE (A) 3	TOTAL NUI SUBSTRAT		2	Pool Depth
MAXIMUM POOL DEPTH (Measure the evaluation. Avoid plunge pools from roa				ch at the time of k ONLY one box)	Max = 30
 ⇒30 centimeters [20 pts] 22.5 – 30 cm [30 pts] >10 – 22.5 cm [25 pts] 		>5 cm – 10 cm [15 pts <5 cm [5 pts] NO WATER OR MOIS	-		
COMMENTS	MAXIM	MUM POOL DEPTH (c	entimeters)	0	Bankfull Width
3. BANK FULL WIDTH (Measured as the	average of 3-4 measuren	nents)	(Chec	k ONLY one box)	Max = 30
 →4.0 meters (>13') [30 pts] →3.0 m - 4.0 m (>9' 7" - 13' [25 pts] →1.5 m - 3.0 m (>9' 7" - 4' 8") [20 pts] 	⊠ □	>1.0 m − 1.5 m (>3' 3" ≤1.0 m (≤ 3' 3") [5 pts			15
COMMENTS <u>5', 6', 4'</u>	AVERA	AGE BANKFULL WIDT	H (meters)	1.5	
RIPARIAN ZONE AND FLOODPLAIN QUAL		ion must also be com ☆NOTE: R	pleted iver Left (L) and Righ	t (R) as looking dov	vnstream¥r
<u>RIPARIAN WIDTH</u>		AIN QUALITY			
L R (Per Bank) ☐ Wide >10 m ☐ Moderate 5 – 10 m ☐ Narrow <5 m ☑ None COMMENTS	☐ ☐ Mature Fore	orest, Shrub or Old Fiel Park, New Field		Conservation Tillag Urban or Industrial Open Pasture, Row Mining or Construct	Crop
FLOW REGIME (At Time of Evaluation) Stream Flowing Subsurface Flow with Isolated Pools	□ `M	heck <i>ONLY</i> one box) loist Channel, Isolated ry Channel, No Water		ittent)	
COMMENTS					
SINUOSITY (Number of bends per 61 m (20 None 1.0 1.5	0 ft) of channel) (C 2.0 2.5		3.0 >3		
STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to M	Moderate ☐ Mod	derate (2 ft/100 ft)	☐ Moderate to S	Severe	Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information must also be comp	leted)	
QHEI PERFORMED? ☐ Yes ☒ No ☐ QHEI Score		If Yes, Attach Completed QHEI Form
DOWNSTREAM DESIGNATED USE(S)		
☐ WWH Name ☐ CWH Name ☐ EWH Name		eam
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIREWATERS	HED AREA. CLEARLY MARK 1	THE SITE LOCATION
USQS Quadrangle Name Elberfield NRCS Soil Map Page	65 NF	RCS Soil Map Stream Order
County Gibson	Township/City Barton	
MISCELLANEOUS		
	7.28.05 Q	Quantity 0.10"
Photograph Information		
Elevated Turbidity?	· · · · · · · · · · · · · · · · · · ·	
Were samples collected for water chemistry? ☐ Yes ☒ No Lab Number	r (Note lab sample no. or id and a	attach results)
Field Measures - Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.)	Conductivity (µmhos/cm)
Is the sampling reach representative of the stream? ☐ Yes ☐ No If no	ot, please explain	
Additional comments/description of pollution impacts		
BIOTIC EVALUATION		· -
Performed? ☐ Yes ☒ No (If Yes, record all observations. Voucher collenumber. Include appropriate field data sheets		
Fish Observed? ☐ Yes ☐ No Voucher? ☐ Yes ☐ No Sa	amanders Observed?	s 🗌 No Voucher? 🔲 Yes 🗌 No
Frogs or Tadpoles	oinvertebrates Observed?	Yes ☐ No Voucher? ☐ Yes ☐ No
Comments Regarding Biology		
Include important landmarks and other features of interest for site	•	• •
CR 650	E	
6		

r.c. ag

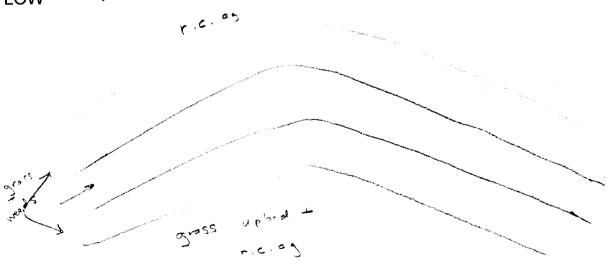


5	5	
v	v	

SITE NAME/LOCATON I-69 Section 1					
SITE NUMBER sec1-s16r2 RIVER BASIN Patoka (#05120209)	DRAINAGE AREA (m1²) 0.99				
LENGTH OF	RIVER RIVER				
STREAM REACH (ft) 200' LAT LONG Mark Pranckus, Erica	CODE MILE				
DATE 8/10/05 SCORER Christensen COMM	ENTS North of 168 & 650, upstream portion of 1-20				
NOTE: Complete All Items On This Form – Refer to "Field Evaluation Manu	al for Ohio's PHWH Streams" for Instructions				
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED	☐ RECOVERING ⊠ RECENT OR NO RECOVERY				
MODIFICATIONS	1				
 SUBSTRATE (Estimate percent of every type of substrate present. Check ON (Max of 32). Add total number of significant substrate types found (Max of 8). Fin boxes A & B. 	LY two predominant substrate TYPE boxes al metric score is sum of				
TYPE PERCENT TYPE	PERCENT Metric				
BLDR SLABS [16 pts] SILT [3 pt]	60 Points				
☐ ☐ BEDROCK [16 pt] ☐ ☐ FINE DETRITU	OODY DEBRIS [3 pts] Substrate				
☐ COBBLE (65-256 mm) [12 pts] ☐ ☐ CLAY OR HAF ☐ GRAVEL (2-64 mm) [9 pts] 5 ☐ MUCK [0 pts]	DPAN [0 pt] 35 Max = 40				
GRAVEL (2-04 fillin) [9 pts]					
Total of Percentages of	A+B				
Bldr Slabs, Boulder, Cobble, Bedrock					
• • • • • • • • • • • • • • • • • • • •	NUMBER OF (B) 3 RATE TYPES				
SUBSTRATE TIPES SUBST	Pool Depth				
2. MAXIMUM POOL DEPTH (Measure the maximum pool depth within the 61 me	May = 20				
evaluation. Avoid plunge pools from road culverts or stormwater pipes)	(Check ONLY one box) 20				
	5 pts]				
□ 22.5 - 30 cm [30 pts] □ <5 cm [5 pts]	MOIST CHANNEL [0 pts]				
COMMENTS 12" MAXIMUM POOL DEP	TH (centimeters) 30 Bankfull Width				
	Max = 30				
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box)					
□ >4.0 meters (>13') [30 pts] □ >1.0 m - 1.5 m (3 or 1.5 m) □ >3.0 m - 4.0 m (>9' 7" - 13' [25 pts] □ ≤1.0 m (≤ 3' 3") [4 or 1.5 m)	•3′ 3″ – 4′ 8″ [15 pts]				
>1.5 m - 3.0 m (>9' 7" - 4' 8") [20 pts]	, , ,				
COMMENTS 5', 7', 7' AVERAGE BANKFULL \	VIDTH (meters) 1.9				
This information must also be completed					
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆ NOT	E: River Left (L) and Right (R) as looking downstream☆				
RIPARIAN WIDTH FLOODPLAIN QUALITY					
L R (Per Bank) L R (Most Predominant per Bank) ☐ ☐ Wide >10 m ☐ ☐ Mature Forest, Wetland	L R □ □ Conservation Tillage				
☐ ☐ Moderate 5 – 10 m ☐ ☐ Immature Forest, Shrub or Ol	d Field 🔲 🔲 Urban or Industrial				
□ □ Narrow <5 m					
COMMENTS					
FLOW REGIME (At Time of Evaluation) (Check ONLY one b	px)				
☐ Stream Flowing ☑ Moist Channel, Isol	ated Pools, No Flow (Intermittent)				
Subsurface Flow with Isolated Pools (Interstitial) Dry Channel, No W	ater (Epnemeral)				
COMMENTS					
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one b	ox) 3.0				
0.5 1.5 2.5	>3				
STREAM GRADIENT ESTIMATE	Medarata ta Causaa				
☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft)	☐ Moderate to Severe ☐ Severe (10 ft/100 ft)				

CWH Name Dis	ship/City Barton	Stream C THE SITE L NRCS Soil Ma	ap Stream Order	3
USQS Quadrangle Name Francisco NRCS Soil Map Page 65 County Gibson Townsh ISCELLANEOUS Base Flow Conditions? Yes \(\suprescript{\text{No}}\) Date of Last Precipitation 7.28.05	ship/City Barton	NRCS Soil Ma	ap Stream Order	3
County Gibson Townsh ISCELLANEOUS Base Flow Conditions? Yes No Date of Last Precipitation 7.28.05	ship/City Barton			3
ISCELLANEOUS Base Flow Conditions?				
Base Flow Conditions? Yes No Date of Last Precipitation 7.28.05	5			
	5			
Photograph Information		Quantity _	0.1"	
Elevated Turbidity? Yes No Canopy (% open) 100%			**	
Were samples collected for water chemistry? ☐ Yes ☒ No Lab Number (Note		d attach result	ts)	
, ('		•	·····
Field Measures - Temp (°C) Dissolved Oxygen (mg/l) pl				
s the sampling reach representative of the stream? ☐ Yes ☐ No ☐ If not, pleas	se explain			
Additional comments/description of pollution impacts Row crop adjacent to both s	sides of stream			
IOTIC EVALUATION				
Performed? ☐ Yes ☒ No				with the site ID
Fish Observed?	ers Observed?	Yes □ No	Voucher?	☐ Yes ☐ No
Frogs or Tadpoles	ebrates Observed?]Yes ∏ No	Voucher?	☐ Yes ☐ No
Comments Regarding Biology				







SITE NAME/LOCATON I-69 Section 1				
SITE NUMBER sec1-s17 RIVER BAS	SIN Patoka (#05120209)	DRAINAGE AR	` ' 	
LENGTH OF STREAM REACH (ft) 200' LAT	LONG	RIVER CODE	RIVER MILE	
DATE 8/9/05 SCORER MP	COMI	MENTS Tributary off of t	3	
NOTE: Complete All Items On This Form - Refe	r to "Field Evaluation Man	ual for Ohio's PHWH St	reams" for Instruction	ons
STREAM CHANNEL NONE / NATURAL CHA	NNEL RECOVERED	☐ RECOVERING	⊠ RECENT OR N	O RECOVERY
MODIFICATIONS			1	
 SUBSTRATE (Estimate percent of every type of (Max of 32). Add total number of significant substr boxes A & B. 			rate TYPE boxes	HHEI
TYPE PERCEN ☐ ☐ BLDR SLABS [16 pts]	<u>IT TYPE</u> ☑ ☐ SILT [3 pt]		PERCENT 75	Metric Points
☐ ☐ BOULDER (>256 mm) [16 pts]	LEAF PACK/	VOODY DEBRIS [3 pts]		Substrate
□ □ BEDROCK [16 pt] □ □ COBBLE (65-256 mm) [12 pts]		RDPAN [0 pt]		Max = 40
☐ GRAVEL (2-64 mm) [9 pts] 25 ☐ SAND (<2mm) [6 pts] 25	MUCK [0 pts]			14
		,		A+B
Total of Percentages of Bidr Slabs, Boulder, Cobble, Bedrock				
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES		. NUMBER OF (B) FRATE TYPES	2	
SUBSTRATE TIPES	3083	RAIE HIPES		Pool Depth
2. MAXIMUM POOL DEPTH (Measure the maximum	n pool depth within the 61 m	eter (200 ft) evaluation re	ach at the time of	Max = 30
evaluation. Avoid plunge pools from road culverts of	• • •	,	ck ONLY one box)	0
>30 centimeters [20 pts] 22.5 – 30 cm [30 pts]	□ >5 cm – 10 cm [□ <5 cm [5 pts]	15 pts]		
>10 – 22.5 cm [25 pts]		MOIST CHANNEL [0 pts]		
COMMENTS	MAXIMUM POOL DEP	TH (centimeters)	0	Bankfull Width
3. BANK FULL WIDTH (Measured as the average of	3-4 measurements)	(Che	ck ONLY one box)	Max = 30
→4.0 meters (>13') [30 pts] →3.0 m − 4.0 m (>9' 7" − 13' [25 pts] →1.5 m − 3.0 m (>9' 7" − 4' 8") [20 pts]		>3' 3" – 4' 8" [15 pts] [5 pts]		-
COMMENTS 4', 5', 5'	AVERAGE BANKFULL	WIDTH (meters)	1.4	
RIPARIAN ZONE AND FLOODPLAIN QUALITY	This information must also b ☆NO	e completed FE: River Left (L) and Righ	nt (R) as looking downs	stream≄
RIPARIAN WIDTH	FLOODPLAIN QUALITY			
L R (Per Bank) L R □ Wide >10 m □ □ □ Moderate 5 – 10 m □ □ □ Narrow <5 m	(Most Predominant per Bank Mature Forest, Wetland Immature Forest, Shrub or O Residential Park, New Field Fenced Pasture		Conservation Tillage Urban or Industrial Open Pasture, Row C Mining or Construction	
COMMENTS		 -		
FLOW REGIME (At Time of Evaluation) Stream Flowing Subsurface Flow with Isolated Pools (Interstitial		lated Pools, No Flow (Intern	nittent)	
SINUOSITY (Number of bends per 61 m (200 ft) of char	anal) (Chook ON! V and	hov)		-
None	nnel) (Check ONLY one	3.0 >3		
STREAM GRADIENT ESTIMATE ☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate	☐ Moderate (2 ft/100 ft)	Severe 🗌 Se	evere (10 ft/100 ft)

HEIPERFORMED? ☐ Yes 🖾	No QHELScore	ilso be completed)	If Yes Att	ach Completed QHEI Form
DOWNSTREAM DESIGNAT				
☐ WWH Name		Distance from	Evaluated Stream Evaluated Stream Evaluated Stream Evaluated Stream	
IAPPING: ATTACH COPIES OF MA			RLY MARK THE SITE LOCA	TION
USQS Quadrangle Name Elberfie	ld NRCS Soil I	Map Page 65	NRCS Soil Map Str	eam Order
County Gibson		Township/City	arton	
ISCELLANEOUS				
Base Flow Conditions? 🛛 Yes 🗌	No Date of Last Pred	cipitation 7.28.05	Quantity	
Photograph Information				· -
Elevated Turbidity? ☐ Yes ☒ No	Canopy (% open	n)		
Were samples collected for water che		Lab Number (Note lab sample		
·	•		,	ty (umbos/em)
Field Measures - Temp (°C)				· ·
Is the sampling reach representative	of the stream? 🛛 Yes 🛭	☐ No If not, please explain		
Additional comments/description of p	ollution impacts Row cro	pp adjacent to stream		
SIOTIC EVALUATION				
Porformed? □ Ves ☑ No. (If Y		Voucher collections optional. NC		
Performed?	nber. Include appropriate field	d data sheets from the Primary H	eadwater Habitat Assessment	Manual)
Performed? ☐ Yes ☒ No (If Y num	nber. Include appropriate field Voucher?	d data sheets from the Primary H	eadwater Habitat Assessment	Manual)
Performed?	ber. Include appropriate field Voucher?	d data sheets from the Primary H	leadwater Habitat Assessment d? ☐ Yes ☐ No Vo	Manual) ucher? ☐ Yes ☐ N
Performed? ☐ Yes ☒ No (If Y num Fish Observed? ☐ Yes ☐ No Frogs or Tadpoles ☐ Yes ☐ No Observed?	Noucher? Yes Voucher? Yes Voucher? No	d data sheets from the Primary H No Salamanders Observe Aquatic Macroinvertebrates Obse	leadwater Habitat Assessment d? ☐ Yes ☐ No Vo erved? ☐ Yes ☐ No Vo	Manual) ucher? ☐ Yes ☐ N
Performed? ☐ Yes ☒ No (If Y num Fish Observed? ☐ Yes ☐ No Frogs or Tadpoles ☐ Yes ☐ No	Noucher? Yes Voucher? Yes Voucher? No	d data sheets from the Primary H No Salamanders Observe Aquatic Macroinvertebrates Obse	leadwater Habitat Assessment d? ☐ Yes ☐ No Vo erved? ☐ Yes ☐ No Vo	Manual) ucher? ☐ Yes ☐ N
Performed? ☐ Yes ☒ No (If Y num Fish Observed? ☐ Yes ☐ No Frogs or Tadpoles ☐ Yes ☐ No Observed?	Noucher? Yes Voucher? Yes Voucher? No	d data sheets from the Primary H No Salamanders Observe Aquatic Macroinvertebrates Obse	leadwater Habitat Assessment d? ☐ Yes ☐ No Vo erved? ☐ Yes ☐ No Vo	Manual) ucher? ☐ Yes ☐ N
Performed?	voucher? Yes Voucher? No A	d data sheets from the Primary H No Salamanders Observe Aquatic Macroinvertebrates Obse	leadwater Habitat Assessment d?	Manual) ucher? ☐ Yes ☐ N
Performed?	Voucher? Yes Voucher? No A	d data sheets from the Primary H No Salamanders Observe Aquatic Macroinvertebrates Obse	leadwater Habitat Assessment d?	Manual) ucher?
Performed?	Voucher? Yes Voucher? No A	d data sheets from the Primary H No Salamanders Observe Aquatic Macroinvertebrates Obse	leadwater Habitat Assessment d?	Manual) ucher?
Performed?	Voucher? Yes Voucher? No A	d data sheets from the Primary H No Salamanders Observe Aquatic Macroinvertebrates Obse	leadwater Habitat Assessment d?	Manual) ucher?
Performed?	Voucher? Yes Voucher? No A	d data sheets from the Primary H No Salamanders Observe Aquatic Macroinvertebrates Obse	leadwater Habitat Assessment d?	Manual) ucher?
Performed?	Voucher? Yes Voucher? No A	d data sheets from the Primary H No Salamanders Observe Aquatic Macroinvertebrates Obse	leadwater Habitat Assessment d?	Manual) ucher?
Performed?	Voucher? Yes Voucher? No A	d data sheets from the Primary H No Salamanders Observe Aquatic Macroinvertebrates Obse	leadwater Habitat Assessment d?	Manual) ucher?
Performed?	Voucher? Yes Voucher? No A	d data sheets from the Primary H No Salamanders Observe Aquatic Macroinvertebrates Obse	leadwater Habitat Assessment d?	Manual) ucher?
Performed?	Voucher? Yes Voucher? No A	d data sheets from the Primary H No Salamanders Observe Aquatic Macroinvertebrates Obse	leadwater Habitat Assessment d?	Manual) ucher?
Performed?	Voucher? Yes Voucher? No A	d data sheets from the Primary H No Salamanders Observe Aquatic Macroinvertebrates Obse	leadwater Habitat Assessment d?	Manual) ucher?

r.c. 99



SITE NAME/LOCATON I-69 Section 1				
SITE NAME/LOCATON I-69 Section 1 SITE NUMBER sec1-s18r1 RIVER BAS	SIN Patoka (#05120209)	DRAINAGE ARE	A (m1 ²) 0.09	
LENGTH OF		RIVER	RIVER	
STREAM REACH (ft) 200' LAT DATE 8/9/05 SCORER MP	LONGCOMMENTS	CODE Upstream channe	MILE	
NOTE: Complete All Items On This Form – Refe				
STREAM CHANNEL NONE / NATURAL CHAN		RECOVERING	RECENT OR NO RECOVERY	
MODIFICATIONS	MEL MECOVERED	RECOVERING	RECENT OR NO RECOVERY	
SUBSTRATE (Estimate percent of every type of (Max of 32). Add total number of significant substrations A & B.			HHEI Metric	
TYPE PERCEN □ BLDR SLABS [16 pts] PERCEN □ BOULDER (>256 mm) [16 pts] PERCEN □ BEDROCK [16 pt] PERCEN □ COBBLE (65-256 mm) [12 pts] PERCEN □ GRAVEL (2-64 mm) [19 pts] PERCEN □ SAND (<2mm) [6 pts]	TYPE	Y DEBRIS [3 pts] _ pts] _	PERCENT 50 Points Substrate Max = 40 5 A+B	
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES	(A) 3 TOTAL NUN SUBSTRATI		Pool Depth	
MAXIMUM POOL DEPTH (Measure the maximum evaluation. Avoid plunge pools from road culverts of the control o			ch at the time of Max = 30	
>30 centimeters [20 pts]	>5 cm – 10 cm [15 pts	,	0	
22.5 – 30 cm [30 pts] >10 – 22.5 cm [25 pts]	☐ <5 cm [5 pts] ☐ NO WATER OR MOIS	T CHANNEI (0 ots)		
COMMENTS	MAXIMUM POOL DEPTH (ce	entimeters)	0 Bankfull Width Max = 30	
3. BANK FULL WIDTH (Measured as the average of	3-4 measurements)	(Check	(ONLY one box) 20	
 >4.0 meters (>13') [30 pts] >3.0 m − 4.0 m (>9' 7" − 13' [25 pts] >1.5 m − 3.0 m (>9' 7" − 4' 8") [20 pts] 	>1.0 m – 1.5 m (>3' 3" ≤1.0 m (≤ 3' 3") [5 pts]			
COMMENTS _6', 4.5', 6.5'	AVERAGE BANKFULL WIDTH	H (meters)	1.7	
RIPARIAN ZONE AND FLOODPLAIN QUALITY	This information must also be com ☆NOTE: Ri		(R) as looking downstream☆	
RIPARIAN WIDTH	FLOODPLAIN QUALITY			
L R (Per Bank) L R □ Wide >10 m □ □ □ Moderate 5 – 10 m □ □ □ Narrow <5 m	(Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field Residential Park, New Field Fenced Pasture		Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction	
FLOW REGIME (At Time of Evaluation) Stream Flowing Subsurface Flow with Isolated Pools (Interstitial) COMMENTS (Check ONLY one box) Moist Channel, Isolated Pools, No Flow (Intermittent) Dry Channel, No Water (Ephemeral)				
COMMENTS	onelly (Cheek CAll V and back			
SINUOSITY (Number of bends per 61 m (200 ft) of char None	□ 2.0 □ 3	3.0		
STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate	☐ Moderate (2 ft/100 ft)	☐ Moderate to S	evere Severe (10 ft/100 ft)	

Base Flow Conditions?									
WWH Name	A OHEL Corm	If You Attach Completed O	l€ ∨∽	• '		•			
WWH Name	IL WHEI FOITH	ii Tes, Attaut Completed Qr	if te						KUCI LE
USQS Quadrangle Name Elberfeld			valuated Stream	Distance from Eva				WWH Name	□cw
MISCELLAREOUS Base Flow Conditions?		TE LOCATION	LY MARK THE SITE L	SHED AREA. CLEARL	G THE ENTIREWATE	S, INCLUDING	OPIES OF MAPS	PING: ATTACH C	MAPPIN
Base Flow Conditions?		oil Map Stream Order	NRCS Soil Ma	65	NRCS Soil Map Pag	<u> </u>	ne <u>Elberfeld</u>	QS Quadrangle Nar	USQS
Base Flow Conditions?			rton	Township/City Barte				unty <u>Gibson</u>	County
Photograph Information Elevated Turbidity? Yes No Canopy (% open) 75% Were samples collected for water chemistry? Yes No Lab Number (Note lab sample no. or id and attach results) Field Measures - Temp (*C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm) Is the sampling reach representative of the stream? Yes No If not, please explain Additional comments/description of pollution impacts Row crops adjacent to both sides of stream BIOTIC EVALUATION Performed? Yes No (If Yes, record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? Yes No Voucher? Yes No Salamanders Observed? Yes No Voucher? Yes Performed? Yes No Voucher? Yes No Noucher? Yes Noucher? Yes No Noucher? Yes Noucher?								CELLANEOUS	MISCEL
Elevated Turbidity?		0.1"	Quantity	7.28.05	te of Last Precipitation	No Date	⊠ Yes □ N	se Flow Conditions?	Base F
Were samples collected for water chemistry?							ı	otograph Informatior	Photog
Field Measures - Temp (°C)				· · · · · · · · · · · · · · · · · · ·	nopy (% open)	Can	☐ Yes 🏻 No	vated Turbidity?	Elevate
Additional comments/description of pollution impacts		esults)	o. or id and attach result	per (Note lab sample no.	Yes ⊠ No Lab Nui	nistry?	d for water chemi	ere samples collecte	Were s
Additional comments/description of pollution impacts	a)	Conductivity (µmhos/cm)	Cond	pH (S.U.)	ed Oxygen (mg/l)	Dissolve) (°C)	ld Measures - Temp	Field N
Additional comments/description of pollution impacts Row crops adjacent to both sides of stream BIOTIC EVALUATION Performed?									
BIOTIC EVALUATION Performed?				not, piease explain		i tile stream?	epresentative or	me sampling reach n	
Performed?			am .	nt to both sides of strea	Row crops adjac	llution impacts	escription of poll	ditional comments/d	Additio
Performed?								TIC EVALUATION	BIOTIC
Performed?	ith the site ID	iples must be labeled with th	E: all voucher samples	lections optional. NOTE	oservations. Voucher o	es, record all ob-	MAL (If Yes		
Frogs or Tadpoles								normed? U Yes	Pertorr
Observed?	☐ Yes ☐ No	lo Voucher? Ye	Yes No	alamanders Observed?	☐ Yes ☐ No	Voucher?] Yes □ No	h Observed?	Fish O
DRAWINGS AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed) Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location.	☐ Yes ☐ No	No Voucher?	ved? ☐ Yes ☐ No	croinvertebrates Observe		Voucher?	⊒ Yes □ No		
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location. FLOW							Biology	mments Regarding	Comm
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location. FLOW									
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location. FLOW									
	ation.							include impo	
								0)4/	^
decrease in the density about stream r.c. as							7		FLO
- () () () () () () () () () () () () ()		who theore	ty down	tree densit	ecrease in	_ d			
		•	J	•					
	,				۲. ٤. مع	1			
	\sim	~~ (e e e e e e e e e e e e e e e e e e e						
				. 5		2			
				. {	()	S 1	5 55	······································	١~
anse .								arise .	
Water								1 1	1
woy				The same of the sa				may	

r. c. ag



SITE NAME/LOCATON I-69 Section 1			
	R BASIN Patoka (#05120209)	DRAINAGE AREA	
LENGTH OF STREAM REACH (ft) 200' L	AT LONG	RIVER CODE	RIVER MILE
• • • • • • • • • • • • • • • • • • • •		IMENTS Ditch north of 750	
NOTE: Complete All Items On This Form -	Refer to "Field Evaluation Ma	nual for Ohio's PHWH Stre	ams" for Instructions
STREAM CHANNEL NONE / NATURAL (CHANNEL	☐ RECOVERING	⊠ RECENT OR NO RECOVERY
MODIFICATIONS			ŀ
 SUBSTRATE (Estimate percent of every ty (Max of 32). Add total number of significant s boxes A & B. 			HHEI
TYPE PE □ BLDR SLABS [16 pts] PE □ BOULDER (>256 mm) [16 pts] PE □ BEDROCK [16 pt] PE □ COBBLE (65-256 mm) [12 pts] Pts] □ GRAVEL (2-64 mm) [9 pts] SAND (<2mm) [6 pts]	FINE DETRI	WOODY DEBRIS [3 pts] TUS [3 pts] ARDPAN [0 pt]	ERCENT 00 Metric Points Substrate Max = 40 4 A+B
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock			
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES		L NUMBER OF (B) TRATE TYPES	1
2. MAXIMUM POOL DEPTH (Measure the ma)	vimum nool denth within the 61 r	neter (200 ft) evaluation reac	Pool Depth Max = 30
evaluation. Avoid plunge pools from road culv			ONLY one box)
 ⇒30 centimeters [20 pts] 22.5 – 30 cm [30 pts] ⇒10 – 22.5 cm [25 pts] 	□ >5 cm – 10 cm □ <5 cm [5 pts] ☑ NO WATER O	[15 pts] R MOIST CHANNEL [0 pts]	
COMMENTS	MAXIMUM POOL DE	PTH (centimeters)	0 Bankfull Width Max = 30
3. BANK FULL WIDTH (Measured as the avera	age of 3-4 measurements)	(Check	ONLY one box) 5
→ 4.0 meters (>13') [30 pts] → 3.0 m – 4.0 m (>9' 7" – 13' [25 pts] → 1.5 m – 3.0 m (>9' 7" – 4' 8") [20 pts]	□ >1.0 m - 1.5 m ⊠ ≤1.0 m (≤ 3' 3"	(>3' 3" – 4' 8" [15 pts] [5 pts]	
COMMENTS _3', 3', 3';	AVERAGE BANKFUL	WIDTH (meters)	0.9
RIPARIAN ZONE AND FLOODPLAIN QUALITY	This information must also ☆NC	be completed PTE: River Left (L) and Right (R) as looking downstream☆
RIPARIAN WIDTH	FLOODPLAIN QUALITY		
	R (Most Predominant per Bar	Old Field	Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction
FLOW REGIME (At Time of Evaluation)	(Check ONLY one	box)	
Stream Flowing Subsurface Flow with Isolated Pools (Inter	Moist Channel, Is	olated Pools, No Flow (Intermitt Water (Ephemeral)	ent)
COMMENTS			
SINUOSITY (Number of bends per 61 m (200 ft) o None	of channel) (Check <i>ONLY</i> one 2.0	3.0	
STREAM GRADIENT ESTIMATE ☐ Flat (0.5 ft/100 ft) ☐ Flat to Moder	rate	ft)	vere Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This information must also be completed)
QHEI PERFORMED?
DOWNSTREAM DESIGNATED USE(S) WWH Name Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIREWATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USQS Quadrangle Name Elberfield NRCS Soil Map Page 65 NRCS Soil Map Stream Order
County Gibson Township/City Barton
MISCELLANEOUS
Base Flow Conditions? 🛛 Yes 🗌 No Date of Last Precipitation 7.28.05 Quantity 0.1"
Photograph Information
Elevated Turbidity?
Were samples collected for water chemistry?
Field Measures - Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream? Yes No If not, please explain
Additional comments/description of pollution impacts Row crops adjacent to both sides of stream
BIOTIC EVALUATION
Performed?
Fish Observed?
Frogs or Tadpoles Observed? Yes No Voucher? Yes Aquatic Macroinvertebrates Observed? Yes No Voucher? Yes No
Comments Regarding Biology
DRAWINGS AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed) Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location.
FLOW F.C. ag
weeks /
ves (->
grass &
r.c. 95



SITE NAME/LOCATON I-69 Section 1	
SITE NAME/LOCATON I-69 Section 1 SITE NUMBER Sec1-s19 RIVER BASIN Patoka (#05120209) DRAINAGE AREA (m1²) 0.06	
LENGTH OF RIVER RIVE	
STREAM REACH (ft) 200' LAT LONG CODE MILE DATE 8/10/05 SCORER MP COMMENTS Off of 725	<u> </u>
NOTE: Complete All Items On This Form – Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructional Complete All Items On This Form – Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instruc	
	NO RECOVERY
MODIFICATIONS	
 SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. 	HHEI
TYPE PERCENT TYPE PERCENT	Metric Points
□ □ BLDR SLABS [16 pts] □ □ SILT [3 pt]	Folits
□ □ BEDROCK [16 pt] □ □ FINE DETRITUS [3 pts] □ □ COBBLE (65-256 mm) [12 pts] □ □ CLAY OR HARDPAN [0 pt] 25	Substrate Max = 40
☐ ☐ GRAVEL (2-64 mm) [9 pts] ☐ ☐ MUCK [0 pts]	5 5
SAND (<2mm) [6 pts] ARTIFICAL [3 pts]	A+B
Total of Percentages of	
Bldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE (A) 3 TOTAL NUMBER OF (B) 2	
SUBSTRATE TYPES SUBSTRATE TYPES	
	Pool Depth
2. MAXIMUM POOL DEPTH (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or stormwater pipes) (Check ONLY one box)	Max = 30
	0
22.5 – 30 cm [30 pts]	
□ >10 – 22.5 cm [25 pts] □ NO WATÉR OR MOIST CHANNEL [0 pts]	
COMMENTS MAXIMUM POOL DEPTH (centimeters) 0	Bankfull
	Width Max = 30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box)	
□ >4.0 meters (>13') [30 pts] □ >1.0 m − 1.5 m (>3' 3" − 4' 8" [15 pts]	5
>3.0 m - 4.0 m (>9' 7" - 13' [25 pts]	
COMMENTS 3.5', 3', 2' AVERAGE BANKFULL WIDTH (meters) 0.9	
This information must also be completed	I
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking down	vnstream☆
RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R □ □ Wide >10 m □ □ Mature Forest, Wetland □ □ Conservation Tillag	e
☐ Moderate 5 – 10 m ☐ Immature Forest, Shrub or Old Field ☐ ☐ Urban or Industrial	
□ □ Narrow <5 m	
COMMENTS	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box)	
☐ Stream Flowing ☐ Moist Channel, Isolated Pools, No Flow (Intermittent) ☐ Subsurface Flow with Isolated Pools (Interstitial) ☒ Dry Channel, No Water (Ephemeral)	
COMMENTS	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box)	
_	
STREAM GRADIENT ESTIMATE ☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐	Severe (10 ft/100 ft)

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIREWATERSHED AREA. CLEARLY MARK THE USQS Quadrangle Name Francisco NRCS Soil Map Page 65 NRCS County Gibson Township/City Barton MISCELLANEOUS Base Flow Conditions? Yes No Date of Last Precipitation 7.28.05 Quare Photograph Information Elevated Turbidity? Yes No Canopy (% open) 100% Were samples collected for water chemistry? Yes No Lab Number (Note lab sample no. or id and attated Measures - Temp (°C) Dissolved Oxygen (mg/l) PH (S.U.) Is the sampling reach representative of the stream? Yes No If not, please explain	Samples must be labeled with the site ID t Assessment Manual) No Voucher? Yes No
WWH Name	Soil Map Stream Order ch results) Conductivity (µmhos/cm) samples must be labeled with the site ID t Assessment Manual) No Voucher?
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIREWATERSHED AREA. CLEARLY MARK THE USQS Quadrangle Name Francisco	E SITE LOCATION 6 Soil Map Stream Order Intity 0.1" Ch results) Conductivity (µmhos/cm) samples must be labeled with the site ID t Assessment Manual) No Voucher?
USQS Quadrangle Name Francisco NRCS Soil Map Page 65 NRCS County Gibson Township/City Barton IISCELLANEOUS Base Flow Conditions? Yes No Date of Last Precipitation 7.28.05 Quar Photograph Information Elevated Turbidity? Yes No Canopy (% open) 100% Were samples collected for water chemistry? Yes No Lab Number (Note lab sample no. or id and atta Field Measures - Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Is the sampling reach representative of the stream? Yes No If not, please explain Additional comments/description of pollution impacts row crop adjacent to stream on both sides SIOTIC EVALUATION Performed? Yes No (If Yes, record all observations. Voucher collections optional. NOTE: all voucher: number. Include appropriate field data sheets from the Primary Headwater Habitat Fish Observed? Yes No Voucher? Yes No Salamanders Observed? Yes Frogs or Tadpoles Yes No Voucher? Yes No Aquatic Macroinvertebrates Observed? Yes	Soil Map Stream Order Intity
Base Flow Conditions?	ch results) Conductivity (µmhos/cm) samples must be labeled with the site ID t Assessment Manual) No Voucher?
Base Flow Conditions?	ch results) Conductivity (µmhos/cm) samples must be labeled with the site ID t Assessment Manual) No Voucher?
Photograph Information Elevated Turbidity?	ch results) Conductivity (µmhos/cm) samples must be labeled with the site ID t Assessment Manual) No Voucher?
Elevated Turbidity?	Conductivity (µmhos/cm) samples must be labeled with the site ID t Assessment Manual) No Voucher? ☐ Yes ☐ No
Were samples collected for water chemistry?	Conductivity (µmhos/cm) samples must be labeled with the site ID t Assessment Manual) No Voucher? ☐ Yes ☐ No
Field Measures - Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) ls the sampling reach representative of the stream?	Conductivity (µmhos/cm) samples must be labeled with the site ID t Assessment Manual) No Voucher? ☐ Yes ☐ No
Additional comments/description of pollution impacts row crop adjacent to stream on both sides BIOTIC EVALUATION Performed? Yes No (If Yes, record all observations. Voucher collections optional. NOTE: all voucher number. Include appropriate field data sheets from the Primary Headwater Habitat Fish Observed? Yes No Voucher? Yes No Salamanders Observed? Yes Cobserved? Yes No Voucher? Yes Aquatic Macroinvertebrates Observed? Yes Observed?	samples must be labeled with the site ID t Assessment Manual) □ No Voucher? □ Yes □ No
Additional comments/description of pollution impacts row crop adjacent to stream on both sides SIOTIC EVALUATION Performed? Yes No (If Yes, record all observations. Voucher collections optional. NOTE: all voucher number. Include appropriate field data sheets from the Primary Headwater Habitat Fish Observed? Yes No Voucher? Yes No Salamanders Observed? Yes Frogs or Tadpoles Yes No Voucher? Yes Aquatic Macroinvertebrates Observed? Yes	samples must be labeled with the site ID t Assessment Manual) ☐ No Voucher? ☐ Yes ☐ No
Performed?	samples must be labeled with the site ID t Assessment Manual)
Performed?	t Assessment Manual) ☐ No Voucher? ☐ Yes ☐ No
Performed?	t Assessment Manual) ☐ No Voucher? ☐ Yes ☐ No
DRAWINGS AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be Include important landmarks and other features of interest for site evaluation and a narrative descri	
FLOW +.c. 99	
	and the same of th
(Carl)	The state of the s
grass may	
Watern 3	
the state of the s	
The state of the s	
r.c. aq	

DAW	***** O	WQ Biologic	al Studies QHEI	(Qualitat	ive Habitat Eva	uation Index	
Sample #	bi	oSample#	Stream Name		Location 1	of proposed I-69 co	rridor
Cumana	Sample Date	County			⊠ Habitat	or proposed 1-69 CO	rridor
Surveyor MP, EC	Sample Date 8.10.05	County Gibson	Macro Sample N/A	туре	Complete	QHEI Score:	25
							6
		ol & 1 Predomina	nt Difflo	Substra	te Quality (check only		
Check all tha			R=Riffle	Subsua	Substrate		VERAGE)
Predominant	Present	Predominant	Present	☐ Limesto	one (1) Hardi	oan (0) 🔲 La	acustrine (0)
PR □□ Bldrs/Sla	<u>PR</u> nbs (10) 🔲 🗌	<u>P</u> R □⊠ Hardpa	<u>P</u> R an (4) ⊠ □	☐ Wetland			hale (-1) oal fines (-2)
☐ ☐ Boulders	s (9) 🗀 🗀	☐ ☐ Detritu		Silt C		Embeddedne	
Cobble (☐ ☐ Muck (— —		ilt heavy (-2)	Extensive	
☐ ☐ Gravel (7 ☐ ☐ Sand (6)	') 🛛 🗆	□ ⊠ Silt (2) □ □ Sludge			ilt moderate (-1) ilt normal (0)	☐ Moderate ⊠ Low/Norr	
☐ ☐ Bedrock	==	☐ ☐ Artifici			ilt free (1)	☐ None (1)	
NOTE: Ignore sludge originating from point sources; score based on natural substrates Comments:							
2 – Instream	Cover (20 po	ints maximum			Instrean	Cover Score:	0
Z - Instream Cover (20 points maximum) Instream Cover Score: 0 Type (check ALL that apply)							GE)
3 – Channel I	Morphology ((check only on	e per category, OR two and	AVERAGE)	C	hannel Score:	5
Sinuosity Development Channelization Stability Modifications/Other ☐ High (4) ☐ Excellent (7) ☐ None (6) ☐ High (3) ☐ Snagging ☐ Impound ☐ Moderate (3) ☐ Good (5) ☐ Recovered (4) ☐ Moderate (2) ☐ Relocation ☐ Islands ☐ Low (2) ☐ Fair (3) ☐ Recovering (3) ☐ Low (1) ☐ Canopy removal ☐ Leveed ☐ None (1) ☐ Poor (1) ☐ Recent or no recovery (1) ☐ Dredging ☐ Bank shaping Comments: ☐ One side channel modifications							
4 – Riparian Zone & Bank Erosion (10 points maximum) Riparian Score: 4							
	looking downstre		ory, check only one per b				
Riparian width L R (per bank) UNIDER STORT (A) Riparian width L R (most predominant per bank) Conservation tillage (1) Narrow 5-10m (2) Residential, park, new field (1) Very narrow <5m (1) None (0) Riparian (past 100 ft Riparian) L R (per bank) L R (per bank) L R (per bank) Urban or industrial (0) Mining, construction (0) Heavy/severe (1) Open pasture/rowcrop (0)							
5a – Pool/Gli	de Quality (1	2 points maxii	mum)		Po	ol/Glide Score:	0

Max Pool Depth (check one)

□ >1 m (6)
□ 0.7-1 m (4)
□ 0.4-0.7 m (2)
□ 0.2-0.4 m (1) Pool/Run/Riffle Current Velocity (check all that apply)

Graph Eddies (1)

Fast (1)

Torrential (-1)

Interstitial (-1) Morphology (check only one, OR check two and AVERAGE) ☐ Torrential (-1) ☐ Interstitial (-1) ☐ Pool width > riffle width (2) ☐ Intermittent ☐ No pool (0) Pool width = riffle width (1) Intermittent (-2) Moderate (1) Pool width < riffle width (0) Slow (1)

Comments: No pools \boxtimes <0.2 m (pool = 0) 5b - Riffle/Run Quality (8) (check only one per category, OR two and AVERAGE) Riffle/Run Score: 0 Riffle/Run Embeddedness Riffle/Run Substrate

Riffle/Run Depth (check one)
Generally >10 cm, Max > 5 ☐ Normal/Low
☐ None (2)
☑ No riffle (0) Generally >10 cm, Max > 50 cm (4) Normal/Low (1) Stable - eg. cobble, boulder (2) Extensive (-1 Moderate (0) Extensive (-1) ☐ Generally >10 cm, Max < 50 cm (3) Mod. stable - eg. pea gravel (1) Unstable – eg. sand, gravel (0) Generally 5-10 cm (1) Generally <5 cm (riffle ≈ 0)
</p> Comments: No riffle/run complexes

6 - Gradient (10 points maximum) **Gradient Score:** 10 Gradient: 26.4 (ft/mile) Average width: 2.1 Drainage Area: 1.33 (square miles) Comments: No information on field data sheet



OWQ Biological Studies QHEI (Qualitative Habitat Evaluation Index)

Sample #	bi	oSample #	Stream Name sec1-s20r2			Location		
<u> </u>						Section 1	of the proposed	1-69 corridor
Surveyor	Sample Date	County	Macro Sample Type N/A			Habitat	OUE! Coope	
MP, EC	8.4.05	Gibson			Cor	nplete	QHEI Score	e: 25
Impacts/Misc	ellaneous							<u>. </u>
Major Suspected In	npacts (check all	that apply)		<u>Mi</u> s	scellaneou	s QHEI Infor	mation	
☐ None☐ Industrial	☐ Suburl ⊠ Chann	ban elization	Subje	ctive Rating (1-10): 3		% Riffle:		reach oresentative
☐ WWTP ☐ Agricultural	☐ Riparia	an Removal Alteration	Aesth	etic Rating (1-10): 2		% Run:		stream?
☐ Livestock ☐ Silviculture	☐ CSOs		Cano	py Cover (% Open): 60%		% Glide:	Ye	8
☐ Construction	Landfi	lls				% Pool:		
☐ Urban Runoff	☐ Natura	II.	Gene	ral QHEI Notes:				
Dallastian Immada	Co		No wa	ater in the channel, so no val	ue for riffl	e/pool/run/gl	ide percentages	
Pollution Impact	Comments.] [
<u> </u>								



SITE NAME/LOCATON I-69 Section 1					
	R BASIN Patoka (#05120209)	DRAINAGE AREA (n	· 		
LENGTH OF STREAM REACH (ft) 200' L	AT LONG	RIVER CODE	RIVER MILE		
DATE 8/10/05 SCORER N	IP COMM	ENTS			
NOTE: Complete All Items On This Form -	Refer to "Field Evaluation Manu	al for Ohio's PHWH Stream	ns" for Instructions		
STREAM CHANNEL NONE / NATURAL C	CHANNEL	☐ RECOVERING ⊠	RECENT OR NO RECOVERY		
MODIFICATIONS			1		
 SUBSTRATE (Estimate percent of every tyl (Max of 32). Add total number of significant s boxes A & B. 			TYPE boxes HHEI Metric		
BLDR SLABS [16 pts]	RCENT TYPE SILT [3 pt]	<u>PEF</u> 75	Points		
☐ BOULDER (>256 mm) [16 pts] ☐ BEDROCK [16 pt]	LEAF PACK/W	OODY DEBRIS [3 pts]	Substrate		
☐ ☐ COBBLE (65-256 mm) [12 pts]	CLAY OR HAR				
☐ ☐ GRAVEL (2-64 mm) [9 pts] ☐ ☐ SAND (<2mm) [6 pts]	☐ ☐ MUCK [0 pts] ☐ ☐ ARTIFICAL [3		5		
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock			A+B		
SCORE OF TWO MOST PREDOMINATE		NUMBER OF (B)	2		
SUBSTRATE TYPES	20B21	RATE TYPES	Pool Depth		
2. MAXIMUM POOL DEPTH (Measure the max	rimum pool depth within the 61 me	ter (200 ft) evaluation reach a	May - 20		
evaluation. Avoid plunge pools from road culv	_ '''	•	(LY one box)		
>30 centimeters [20 pts] 22.5 – 30 cm [30 pts]	☐ >5 cm – 10 cm [1 ☐ <5 cm [5 pts]	5 pts]			
>10 – 22.5 cm [25 pts]		MOIST CHANNEL [0 pts]			
COMMENTS	MAXIMUM POOL DEPT	H (centimeters)	0 Bankfull Width Max = 30		
3. BANK FULL WIDTH (Measured as the avera	ge of 3-4 measurements)	(Check O/	/LY one box) 20		
 3.0 m = 4.0 m (>9¹ 7" = 13¹ [25 pts] >1.5 m = 3.0 m (>9¹ 7" = 4¹ 8") [20 pts] 	□ >1.0 m – 1.5 m (> □ ≤1.0 m (≤ 3' 3") [{	3' 3" – 4' 8" [15 pts] 5 pts]			
COMMENTS 6'. 5', 5'	AVERAGE BANKFULL V	VIDTH (meters)	1.6		
RIPARIAN ZONE AND FLOODPLAIN QUALITY	This information must also be ☆NOTI	completed E: River Left (L) and Right (R)	as looking downstream☆		
RIPARIAN WIDTH	FLOODPLAIN QUALITY				
☐ Wide >10 m ☐ Moderate 5 – 10 m ☐ Narrow <5 m	R (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Residential Park, New Field Fenced Pasture	I Field □ □ Urb □ □ Ope	nservation Tillage an or Industrial en Pasture, Row Crop ing or Construction		
FLOW REGIME (At Time of Evaluation)	(Check ONLY one bo				
☐ Stream Flowing ☐ Subsurface Flow with Isolated Pools (Inter-	Moist Channel, Isola	ated Pools, No Flow (Intermitten	()		
COMMENTS					
SINUOSITY (Number of bends per 61 m (200 ft) o □ None □ 1.0 □ 0.5 □ 1.5	f channel) (Check <i>ONLY</i> one b □ 2.0 □ □ 2.5 ⊠	ox) 3.0 >3			
STREAM GRADIENT ESTIMATE ☐ Flat (0.5 ft/100 ft) ☐ Flat to Moder	ate	☐ Moderate to Sever	re Severe (10 ft/100 ft)		

ADDITIONAL STREAM INFORMATION (This information must also be completely performed? Yes No QHEI Score	•		If Yes, Attach Comp	oleted OHEI Form
DOWNSTREAM DESIGNATED USE(S)		-		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
☐ WWH Name ☐ CWH Name ☐ EWH Name	Distance from Evaluat	ed Stream		
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIREWATERSH		ARK THE SI	TE LOCATION	
USQS Quadrangle Name Francisco NRCS Soil Map Page	65	_ NRCS So	oil Map Stream Orde	er
County Gibson	Township/City Barton			
MISCELLANEOUS				
Base Flow Conditions? ☐ Yes ☐ No Date of Last Precipitation	7.28.05	Quantity	0.1"	
Photograph Information				
Elevated Turbidity? ☐ Yes ☒ No Canopy (% open)				
Were samples collected for water chemistry? ☐ Yes ☒ No Lab Number			results)	
Field Measures - Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.)		Conductivity (µmhos	/cm)
Is the sampling reach representative of the stream? ☐ Yes ☐ No If no				
Additional comments/description of pollution impacts Row crops adjacent	o stream on both sides			
BIOTIC EVALUATION				
Performed?				d with the site ID
Fish Observed? ☐ Yes ☐ No Voucher? ☐ Yes ☐ No Sala	amanders Observed?	☐ Yes ☐ N	No Voucher?	☐ Yes ☐ No
Frogs or Tadpoles	invertebrates Observed?	Yes [] No Voucher?	☐ Yes ☐ No
Comments Regarding Biology				
	· · · · · · · · · · · · · · · · · · ·			
DRAWINGS AND NARRATIVE DESCRIPTION O	F STREAM REACH (This	s must be co	empleted)	
Include important landmarks and other features of interest for site				location.
FLOW				
r.c. 49				
			A STATE OF THE PARTY OF THE PAR	ne The
	The State of the S	10	Cooper Contract	
	The state of the s	,	· Andrews	
quass				



SITE NAME/LOCATON I-69 Section 1			
SITE NUMBER Sec1-s22 RIVER BA	SIN Patoka (#05120209)	DRAINAGE AR	` '
LENGTH OF STREAM REACH (ft) 200' LAT	LONG	RIVER CODE	RIVER MILE
DATE 8/10/05 SCORER MP	COMM		East of 1-29 and 1-27
NOTE: Complete All Items On This Form - Refe	er to "Field Evaluation Manu	al for Obio's DUWU Se	reame" for Instructions
•			
STREAM CHANNEL NONE / NATURAL CHA	NNEL RECOVERED		□ RECENT OR NO RECOVERY
MODIFICATIONS			
 SUBSTRATE (Estimate percent of every type of (Max of 32). Add total number of significant subst boxes A & B. 			HHEI
TYPE PERCEI			PERCENT Metric
☐ ☐ BLDR SLABS [16 pts] ☐ ☐ BOULDER (>256 mm) [16 pts]	🛛 🗌 SILT [3 pt] LEAF PACK/W	OODY DEBRIS [3 pts]	75 Points
BEDROCK [16 pt]	FINE DETRITU	S [3 pts]	Substrate
☐ ☐ COBBLE (65-256 mm) [12 pts] ☐ ☐ GRAVEL (2-64 mm) [9 pts]	☐ ☐ CLAY OR HAR ☐ ☐ MUCK [0 pts]	DPAN [0 pt]	25 Max = 40
SAND (<2mm) [6 pts]	ARTIFICAL [3 p	its]	5
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock			A+B
SCORE OF TWO MOST PREDOMINATE	(A) 3 TOTAL	NUMBER OF (B)	2
SUBSTRATE TYPES	SUBSTI	RATE TYPES	
			Pool Depth
MAXIMUM POOL DEPTH (Measure the maximum evaluation. Avoid plunge pools from road culverts			ach at the time of ck ONLY one box)
. • .		•	o
 >30 centimeters [20 pts] 22.5 – 30 cm [30 pts] 	>5 cm – 10 cm [18]	5 pts]	
>10 - 22.5 cm [25 pts]		MOIST CHANNEL [0 pts]	
	···· - ··		
COMMENTS	MAXIMUM POOL DEPT	H (centimeters)	0 Bankfull Width
			Max = 30
3. BANK FULL WIDTH (Measured as the average o	f 3-4 measurements)	(Che	ck ONLY one box) 5
☐ >4.0 meters (>13') [30 pts] ☐ >3.0 m − 4.0 m (>9' 7" − 13' [25 pts]		3' 3" – 4' 8" [15 pts]	
>3.0 m - 4.0 m (>9 7 - 13 [25 pts]	≤1.0 m (≤ 3' 3") [5	ptsj	
COMMENTS 2', 5', 1.5'	AVERAGE BANKFULL V	/IDTH (meters)	0.9
	This information must also be		l
RIPARIAN ZONE AND FLOODPLAIN QUALITY	☆NOTE	: River Left (L) and Rigi	ht (R) as looking downstream☆
RIPARIAN WIDTH	FLOODPLAIN QUALITY		
LR (Per Bank) LR	(Most Predominant per Bank)	<u>L</u> R	
☐	Mature Forest, Wetland Immature Forest, Shrub or Old	Field	Conservation Tillage Urban or Industrial
□ □ Narrow <5 m □ □	Residential Park, New Field		Open Pasture, Row Crop
⊠ None □ □	Fenced Pasture		Mining or Construction
COMMENTS			
FLOW REGIME (At Time of Evaluation) ☐ Stream Flowing	(Check ONLY one bo	x) ted Pools, No Flow (Interr	nittent)
Subsurface Flow with Isolated Pools (Interstitia) Dry Channel, No Wa		
COMMENTS			
SINUOSITY (Number of bends per 61 m (200 ft) of cha	nnel) (Check ONLY one b	ox)	
	☐ 2.0 □	3.0	
□ 0.5 □ 1.5	2.5	>3	
STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate	☐ Moderate (2 ft/100 ft)	☐ Moderate to	Severe Severe (10 ft/100 ft)

DDITIONAL STREAM INFORMATION (This information must also be cor	mpleted)
HEI PERFORMED?	If Yes, Attach Completed QHEI Form
DOWNSTREAM DESIGNATED USE(S)	
WWH Name CWH Name EWH Name	
APPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIREWATER	RSHED AREA. CLEARLY MARK THE SITE LOCATION
JSQS Quadrangle Name Francisco NRCS Soil Map Page	65 NRCS Soil Map Stream Order
County Gibson	Township/City Barton
SCELLANEOUS	
	7.28.05 Quantity 0.1"
Photograph Information	
Elevated Turbidity?	6
Nere samples collected for water chemistry? 💮 🗌 Yes 🖾 No 🗈 Lab Num	nber (Note lab sample no. or id and attach results)
Field Measures - Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.) Conductivity (µmhos/cm)
s the sampling reach representative of the stream? ☐ Yes ☐ No ☐ If	f not, please explain
Additional comments/description of pollution impacts Row crop adjacen	nt to stream on both sides
OTIC EVALUATION	
	ollections optional. NOTE: all voucher samples must be labeled with the site ID ets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? Yes No Voucher? Yes No S	Salamanders Observed? ☐ Yes ☐ No Voucher? ☐ Yes ☐ No
Frogs or Tadpoles	acroinvertebrates Observed?
Comments Regarding Biology	
	N OF STREAM REACH (This must be completed) site evaluation and a narrative description of the stream's location.
	The state of the s
weeks	
res. 7	
X	

r.c. 99



6	1
·	

SITE NAME/LOCATON I-69 Section 1			
SITE NUMBER sec1-s25r1 RIVER BAS	SIN	DRAINAGE AR	EA (m1 ²) 0.31
LENGTH OF		RIVER	RIVER
STREAM REACH (ft) 200' LAT	LONG	CODE	MILE
DATE 8/11/05 SCORER MP	COMMI	ENTS Downstream	
NOTE: Complete All Items On This Form - Refe	er to "Field Evaluation Manua	al for Ohio's PHWH St	reams" for Instructions
STREAM CHANNEL NONE / NATURAL CHAI	NNEL TRECOVERED	⊠ RECOVERING	☐ RECENT OR NO RECOVERY
-		⊠ KEOOTEKINO	- REGERT OF THE REGULATION
MODIFICATIONS			
 SUBSTRATE (Estimate percent of every type of (Max of 32). Add total number of significant substr boxes A & B. 			HHEI
TYPE PERCEN			PERCENT Metric
☐ ☐ BLDR SLABS [16 pts] ☐ ☐ BOULDER (>256 mm) [16 pts]	SILT [3 pt] SILT [3 pt] LEAF PACK/WO	OODY DEBRIS [3 pts]	Points
☐ ☐ BOULDER (>256 mm) [16 pts]			Substrate
☐ ☐ COBBLE (65-256 mm) [12 pts]	⊠ □ CLAY OR HARI		25 Max = 40
☐ GRAVEL (2-64 mm) [9 pts] 75	MUCK [0 pts]	43	
☐ ☐ SAND (<2mm) [6 pts]	ARTIFICAL [3 p	tsj	A+B
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock			
		NUMBER OF (B)	2
SUBSTRATE TYPES	SUBSTR	RATE TYPES	
			Pool Depth Max = 30
2. MAXIMUM POOL DEPTH (Measure the maximum			ach at the time of
evaluation. Avoid plunge pools from road culverts of	or stormwater pipes)	(Chec	ck ONLY one box) 25
>30 centimeters [20 pts]	>5 cm – 10 cm [18	pts]	
22.5 – 30 cm [30 pts] >10 – 22.5 cm [25 pts]	☐ <5 cm [5 pts] ☐ NO WATER OR N	OIST CHANNEL [0 pts]	
<u> </u>			
COMMENTS _ 6"	MAXIMUM POOL DEPT	-l (centimeters)	15.2 cm Bankfull
OSMALLATO	WOUNDING GOLDER TO	T (continue tors)	Width
3. BANK FULL WIDTH (Measured as the average of	(2.4 magazzamanta)	(Cha	Max = 30
·	<u>_</u>	•	ck ONLY one box) 25
→ 4.0 meters (>13') [30 pts]→ 3.0 m – 4.0 m (>9' 7" – 13' [25 pts]	>1.0 m – 1.5 m (> ≤1.0 m (≤ 3' 3") [5	3' 3" – 4' 8" [15 pts]	
>1.5 m - 3.0 m (>9' 7" - 4' 8") [20 pts]		pesi	
COMMENTS 14', 10', 13'	AVERAGE BANKFULL W	IDTH (meters)	3.7 m
		,	<u> </u>
RIPARIAN ZONE AND FLOODPLAIN QUALITY	This information must also be	•	nt (R) as looking downstream☆
		. INIVELLENT (L) and Rigi	it (it) as looking downstream
RIPARIAN WIDTH	FLOODPLAIN QUALITY		
LR (Per Bank) LR	(Most Predominant per Bank)	L R	O and a settle of Tille of
☐ ☐ Wide >10 m ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	Mature Forest, Wetland Immature Forest, Shrub or Old	Field	Conservation Tillage Urban or Industrial
□ Narrow <5 m □ □	Residential Park, New Field		Open Pasture, Row Crop
□ □ None □ □	Fenced Pasture		Mining or Construction
COMMENTS			
FLOW REGIME (At Time of Evaluation)	(Check ONLY one bo	x)	
☐ Stream Flowing	Moist Channel, Isola	téd Pools, No Flow (Interr	nittent)
Subsurface Flow with Isolated Pools (Interstitial)) Dry Channel, No Wa	ter (Ephemeral)	
COMMENTS			
SINUOSITY (Number of bends per 61 m (200 ft) of char			
☐ None ☐ 1.0 ☐ 1.5	□ 2.0 ⊠ □ 2.5 □	3.0	
	□ 2.5 □	>3	
STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate	☐ Moderate (2 ft/100 ft)	☐ Moderate to	Severe Severe (10 ft/100 ft)
	Woderate (2 to 100 ft)	- INIOGEIALE LO	Severe (10 10 100 lt)

ADDITIONAL STREAM INFORMATION (This informati	on must also be compl	eted)			
QHEIPERFORMED? ☐ Yes ☒ No QHEISco	re		If Yes, /	Attach Complete	d QHEI Form
DOWNSTREAM DESIGNATED USE(S)					
☐ WWH Name		Distance from Custosts			
D CIALI Name		Distance from Evaluate			
MAPPING: ATTACH COPIES OF MAPS, INCLUDING	HE ENTIREWATERSH	ED AREA. CLEARLY MA	ARK THE SITE LOC	ATION	
USQS Quadrangle Name Francisco N	IRCS Soil Map Page _	54	_ NRCS Soil Map	Stream Order _	1
County Gibson		Township/City Barton		_	
IISCELLANEOUS					
Base Flow Conditions? ☐ Yes ☐ No Date of	of Last Precipitation7	.28.05	Quantity 0.1	**************************************	
Photograph Information					
Elevated Turbidity? ☐ Yes ☑ No Canop	oy (% open)		<u> </u>		
Were samples collected for water chemistry?	s ⊠ No Lab Number	(Note lab sample no. or id	and attach results)		
Field Measures - Temp (°C) Dissolved G	Oxygen (mg/l)	pH (S.U.)	Conduct	tivity (µmhos/cm)	
Is the sampling reach representative of the stream?	☑ Yes ☐ No If no	, please explain			
Additional comments/description of pollution impacts					
BIOTIC EVALUATION					· · · · · ·
		tions optional. NOTE: all from the Primary Headwate			th the site ID
Fish Observed? Yes No Voucher?	☐ Yes ☐ No Sala	manders Observed?	☐ Yes ☐ No	Voucher?	☐ Yes ☐ No
Frogs or Tadpoles	Yes Aquatic Macro	nvertebrates Observed?	☐ Yes ☐ No	Voucher? [] Yes □ No
Comments Regarding Biology	 				
DRAWINGS AND NARRA Include important landmarks and other feat					tion
	ures of interest for site	evaluation and a narrativ	ve description of th	ie stream's loca	tion.
FLOW				•	
		1 5	Wood	land	
				\neg	
r (12.05	-		\mathcal{F}_{ij})	
		-6	لى . ئارى		
$\mathcal{O}(\mathcal{O})$	$\frac{1}{2}$		\wedge	1	
	43 (A = A = A = A	() (
			ر کا کہ کا ا	1	
				•	
11315					
$\omega = \omega \cup (1, 1)$		′ (\ >	5	$\langle \cdot \rangle$	
	Non New Market Control	< $>) t =$	}		
r.c.09			1		
1, 0. 49					

	- 0	NQ Biological	Studies QHE	(Qualitati	ve Habitat Eva	uation Index	
Sample #	bio	Sample #	Stream Name		Location Section 1	of proposed I-69 co	rridor
Surveyor	Sample Date	County	Macro Samp	le Type	⊠ Habitat		
MP, EC	August 4, 2005	Gibson	N/A		Complete	QHEI Score:	23
1 – Substrate	e (20 points m	aximum)			Su	bstrate Score:	10
		ol & 1 Predominant		Substrat	e Quality (check only		VERAGE)
Predominant	t are present Present	<u>P=Pool, R=</u> <u>Predominant</u>	Present	Limesto	· · · =	pan (0)	custrine (0)
PR Bldrs/SI		PR ☐ ☐ Hardpan	• • = =	☐ Tills (1) ☐ Wetland			hale (-1) oal fines (-2)
☐ ☐ Boulder ☐ ☐ Cobble ((8)	☐ ☐ Detritus (☐ ☐ Muck (2)	(3)		<u>over</u> it heavy (-2)	Embeddedne Extensive	• (- 2)
☐ ☑ Gravel (* ☐ ☐ Sand (6)	•	☐		⊠ Sii	lt moderate (-1) lt normal (0)	☐ Moderate ☑ Low/Noπ	
☐ ☐ Bedrock	• • • • •	☐ ☐ Artificial	• •		t free (1)	☐ None (1)	
	udge originating fro ased on natural sul		>4 substrates preseinments:	nt (2)			
2 – Instream	Cover (20 poi	ints maximum)			Instrean	n Cover Score:	0
Type (check ALL	that apply)	Deep pools (2)	Out our (1)		Amount (check only		GE)
	vegetation (1)	☐ Rootwads (1) ☐ Boulders (1)	☐ Oxbows (1) ☐ Aquatic macro ☐ Logs and woo		☐ Mode	sive >75% (11) rate 25-75% (7) e 5-25% (3)	
☐ Shallows (in s☐ Rootmats (1)		Comments: no wate				absent <5% (1)	
3 – Channel	Morphology (20) (check only one p	er category, OR two an	d AVERAGE)	C	hannel Score:	7
Sinuosity ☐ High (4)	Development ☐ Excellent (7	Channelization None (6)		<u>ibility</u> High (3)	Modifications/Othe ⊠ Snagging	<u>r</u> □ Impound	1
☐ Moderate (3) ☑ Low (2)	☐ Good (5) ☐ Fair (3)	Recovered ((4)	Moderate (2) Low (1)	☐ Relocation ☐ Canopy remov	☐ Islands	
☐ None (1) Comments:	⊠ Poor (1)	⊠ Recent or ne	o recovery (1)		□ Dredging □ □ One side chans	☑ Bank sh nel modifications	aping
4 – Riparian	Zone & Bank	Erosion (10 poi	nts maximum\			Riparian Score:	2
Left/Right banks	looking downstrea	m (for each category	, check only one per		per bank and AVERAG	<u>iE</u>)	
Riparian width L R (per bank)	Erosion/Runoff-Flood L R (most predomi	inant per bank) L	. R	ī	ank Erosion R (per bank)	
☐ ☐ Wide >50 ☐ Moderate	10-50 m (3)	☐ ☐ Forest, swamp ☐ ☐ Shrub or old fi		🛾 🔲 Urban or		☐ Moderate (2)	
☐ ☐ Narrow 5-	ow <5m (1)	Residential, pa			onstruction (0) sture/rowcrop (0)	Heavy/severe	(1)
⊠ ⊠ None (0)	· · · · · · · · · · · · · · · · · · ·	Comments:					
		2 points maximu		Da al/D		ol/Glide Score:	0
Max Pool Depth ∈	(CHECK ONE)	Morphology (chect OR check two and ☐ Pool width > rif	AVERAGE)	☐ Eddi	<u>n/Riffle Current Veloci</u> es (1) ⁽⁴⁾	☐ Torrential	(-1)
0.7-1 m (4) 0.4-0.7 m (2)		Pool width = rif	ffle width (1)		eráte (1)	☐ Interstitial ☐ Intermitte	nt (-2)
☐ 0.2-0.4 m (1) ☑ <0.2 m (pool	= 0) Con	☐ Pool width < rit nments: No pools	(U)	☐ Slow	(1)	⊠ <u>No pool ((</u>	<u></u>

5b - Riffle/Run Quality (8) (check only one per category, OR two and AVERAGE)

Riffle/Run Substrate

Comments: Any site with a gradient > than the upper bound of the "very high" (40 ft/sm) is assigned a score of "4"

Comments: No riffle/run complexes

Stable - eg. cobble, boulder (2)

Mod. stable – eg. pea gravel (1)
Unstable – eg. sand, gravel (0)

Gradient: 158.4 (ft/mile)

Riffle/Run Depth (check one)

Generally 5-10 cm (1) ☑ Generally <5 cm (riffle = 0)

Average width: 0.86

Generally >10 cm, Max > 50 cm (4)

Generally >10 cm, Max < 50 cm (3)

6 - Gradient (10 points maximum)

0

4

Riffle/Run Score:

Gradient Score:

Drainage Area: 1.02 (square miles)

□ Normal/Low
□ None (2)
□ No riffle (0)

Normal/Low (1)

Riffle/Run Embeddedness

Extensive (-1)

Extensive (-1)

Moderate (0)



OWQ Biological Studies QHEI (Qualitative Habitat Evaluation Index)

Sample #	bi	oSample #	Stream Name	Location	n 1 of proposed I-69 corridor
Surveyor	Sample Date	County	Macro Sample Type	🖂 Habitat	
MPEC	8.4.05	Gibson	N/A	Complete	QHEI Score: 23
Impacts/Misc	ellaneous	· · · · · · · · · · · · · · · · · · ·		·	
Major Suspected In	npacts (check all t	that apply)		Miscellaneous QHEI Inf	ormation
□ None □ Industrial □ WWTP ☑ Agricultural □ Livestock □ Silviculture □ Construction ☑ Urban Runoff	☐ Riparia☐ Flow A☐ CSOs☐ Mining☐ Landfi	elization an Removal alteration	Aesthetic Rating (1-10):	3 % Riffle: 4 % Run: 100: % Glide: % Pool:	Is reach representative of stream? Yes
Pollution Impact	Comments:				



4	Λ	
	v	

SITE NAME/LOCATON I-69 Section 1	
SITE NUMBER sec1-s29 RIVER BASIN Patoka (#05120209) DRAINAGE AREA (m1²) 0.02	
LENGTH OF RIVER RIVER	R
STREAM REACH (ft) 200' LAT LONG CODE MILE	
DATE 8.11.05 SCORER Comments Erosion channel in row crop field nor	th of 550
NOTE: Complete All Items On This Form – Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instruct	ions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR N	
MODIFICATIONS	l
SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of	
boxes A & B.	HHEI Metric
TYPE PERCENT TYPE PERCENT PERCENT 10 □ □ BLDR SLABS [16 pts] □ □ SILT [3 pt] 10	Points
BOULDER (>256 mm) [16 pts] LEAF PACK/WOODY DEBRIS [3 pts]	
□ □ BEDROCK [16 pt] □ □ FINE DETRITUS [3 pts] □ □ CLAY OR HARDPAN [0 pt] 90	Substrate Max = 40
GRAVEL (2-64 mm) [9 pts] MUCK [0 pts]	5
SAND (<2mm) [6 pts] ARTIFICAL [3 pts]	A+B
Total of Percentages of	
Bldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE (A) 3 TOTAL NUMBER OF (B) 2	
SUBSTRATE TYPES SUBSTRATE TYPES	
	Pool Depth
2. MAXIMUM POOL DEPTH (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or stormwater pipes) (Check ONLY one box)	Max = 30
□ >30 centimeters [20 pts] □ >5 cm – 10 cm [15 pts]	<u> </u>
☐ 22.5 – 30 cm [30 pts] ☐ <5 cm [5 pts] ☐ >10 – 22.5 cm [25 pts] ☐ NO WATER OR MOIST CHANNEL [0 pts]	
NO WATER OR MOIST CHANNEL [V PIS]	
COMMENTS MAXIMUM POOL DEPTH (centimeters) 0 cm	Bankfull
	Width Max = 30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box)	5
□ >4.0 meters (>13') [30 pts] □ >1.0 m − 1.5 m (>3' 3" − 4' 8" [15 pts]	
>3.0 m - 4.0 m (>9 7" - 13' [25 pts]	
COMMENTS AVERAGE BANKFULL WIDTH (meters) 0.8 m	
This information must also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking down	nstream☆
RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R	
☐ ☐ Wide >10 m ☐ ☐ Mature Forest, Wetland ☐ ☐ Conservation Tillage ☐ ☐ Moderate 5 – 10 m ☐ ☐ Immature Forest, Shrub or Old Field ☐ ☐ Urban or Industrial	
☐	Crop
	,,,
COMMENTS (At Time of Evaluation) (Check ON Vision hav)	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box) ☐ Stream Flowing ☐ Moist Channel, Isolated Pools, No Flow (Intermittent)	
Subsurface Flow with Isolated Pools (Interstitial)	
COMMENTS	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box)	
□ None □ 1.0 □ 2.0 □ 3.0 □ 0.5 □ 1.5 □ 2.5 □ >3	
STREAM GRADIENT ESTIMATE	
	evere (10 ft/100 ft)

HEIPERFORMED? ☐ Yes ☒ No QHEIScore		If Y	es, Attach Comp	leted QHEI Form
DOWNSTREAM DESIGNATED USE(S)				
] WWH Name] CWH Name] EWH Name	5	d Stream		
APPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIREWATER:	SHED AREA. CLEARLY MA	RK THE SITE	LOCATION	
SQS Quadrangle Name Francisco NRCS Soil Map Page	54	_ NRCS Soil N	/lap Stream Orde	r
ounty Gibson	Township/City Barton			
SCELLANEOUS				
ase Flow Conditions? 🛛 Yes 🗌 No Date of Last Precipitation	7.28.05	Quantity	0.1"	
hotograph Information				
levated Turbidity?				
	per (Note lab sample no. or id		ulte).	
, – –	•		,	
ield Measures - Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.)	Cor	iductivity (µmhos	/cm)
the sampling reach representative of the stream? $\hfill \square$ Yes $\hfill \square$ No \hfill	not, please explain			
			 _	
dditional comments/description of pollution impacts Row crop adjacent	to both sides of stream			
	to both sides of stream			
OTIC EVALUATION (If Yes, record all observations, Voucher col	lections optional. NOTE: all			d with the site ID
OTIC EVALUATION erformed? ☐ Yes ☒ No	lections optional. NOTE: all ts from the Primary Headwate			
erformed?	lections optional. NOTE: all ts from the Primary Headwate	er Habitat Asses	ssment Manual) Voucher?	☐ Yes ☐ No
OTIC EVALUATION erformed? ☐ Yes ☒ No	lections optional. NOTE: all ts from the Primary Headwate alamanders Observed?	er Habitat Asses □ Yes □ No □ Yes □ N	ssment Manual) Voucher?	d with the site ID ☐ Yes ☐ No
OTIC EVALUATION erformed? ☐ Yes ☒ No (If Yes, record all observations. Voucher col number. Include appropriate field data shee ish Observed? ☐ Yes ☐ No Voucher? ☐ Yes ☐ No S	lections optional. NOTE: all ts from the Primary Headwate alamanders Observed?	er Habitat Asses □ Yes □ No □ Yes □ N	ssment Manual) Voucher?	☐ Yes ☐ No

FLOW



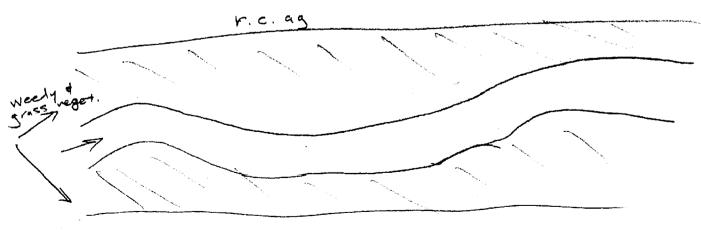
MANNERS MANNERS

r.c.a,



SITE NAME/LOCATON I-69 Section 1		
SITE NUMBER sec1-s30r3 RIVER BASI	N Patoka (#05120209)	DRAINAGE AREA (m1²) 0.79
LENGTH OF		RIVER RIVER
STREAM REACH (ft) 200' LAT	ranckus, Erica COMMENTS	CODE MILE
DATE 8.11.05 SCORER Christe		Section in northbound lane
NOTE: Complete All Items On This Form - Refer	to "Field Evaluation Manual for	Ohio's PHWH Streams" for Instructions
STREAM CHANNEL NONE / NATURAL CHAN	NEL RECOVERED	RECOVERING
MODIFICATIONS		1
SUBSTRATE (Estimate percent of every type of a (Max of 32). Add total number of significant substrations A B.		
TYPE PERCEN	T TYPE	PERCENT Metric
BLDR SLABS [16 pts]	☐ ☐ SILT [3 pt]	10 Points
☐ ☐ BOULDER (>256 mm) [16 pts]	LEAF PACK/WOODY FINE DETRITUS [3 pt	
COBBLE (65-256 mm) [12 pts]	□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	
☐ GRAVEL (2-64 mm) [9 pts] 40	MUCK [0 pts]	12
SAND (<2mm) [6 pts]	ARTIFICAL [3 pts]	A+B
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock		
	A) 9 TOTAL NUME	BER OF (B) 3
SUBSTRATE TYPES	SUBSTRATE	
		Pool Depth
2. MAXIMUM POOL DEPTH (Measure the maximum evaluation. Avoid plunge pools from road culverts or		0 ft) evaluation reach at the time of (Check ONLY one box) Max = 30 25
>30 centimeters [20 pts]	>5 cm – 10 cm [15 pts]	-
22.5 – 30 cm [30 pts] > 10 – 22.5 cm [25 pts]	☐ <5 cm [5 pts] ☐ NO WATER OR MOIST	CHANNEL [0 pts]
<u> </u>		
COMMENTS	MAXIMUM POOL DEPTH (cen	timeters) 15.2 cm Bankfull Width Max = 30
3. BANK FULL WIDTH (Measured as the average of	3-4 measurements)	(Check ONLY one box) 20
>4.0 meters (>13') [30 pts]	>1.0 m – 1.5 m (>3' 3" –	
□ >3.0 m − 4.0 m (>9 ⁷ 7" − 13 ⁷ [25 pts] □ >1.5 m − 3.0 m (>9 ⁷ 7" − 4 ⁷ 8") [20 pts]	≤1.0 m (≤ 3' 3") [5 pts]	
COMMENTS	AVERAGE BANKFULL WIDTH	(meters) 2.5 m
	 This information must also be compl	eted
RIPARIAN ZONE AND FLOODPLAIN QUALITY	•	er Left (L) and Right (R) as looking downstream☆
RIPARIAN WIDTH	FLOODPLAIN QUALITY	
LR (Per Bank) LR	(Most Predominant per Bank)	L R
☐ ☐ Wide >10 m ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	Mature Forest, Wetland Immature Forest, Shrub or Old Field	☐ ☐ Conservation Tillage ☐ ☐ Urban or Industrial
□ □ Narrow <5 m □ □	Residential Park, New Field	Open Pasture, Row Crop
⊠ ⊠ None □ □	Fenced Pasture	☐ ☐ Mining or Construction
COMMENTS		
FLOW REGIME (At Time of Evaluation) ☐ Stream Flowing	(Check <i>ONLY</i> one box)	ools No Flow (Intermittent)
☐ Stream Flowing ☐ Subsurface Flow with Isolated Pools (Interstitial)		
COMMENTS		•
SINUOSITY (Number of bends per 61 m (200 ft) of change	nel) (Check ONLY one box)	
☐ None ☐ 1.0		
0.5 1.5	2.5 >3	
STREAM GRADIENT ESTIMATE ☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate	☐ Moderate (2 ft/100 ft) ☐	Moderate to Severe Severe (10 ft/100 ft)

WWH Name CWH Name EWH Name	Distance from Contrated	Stream	
PPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIREWATERS	HED AREA. CLEARLY MAR	K THE SITE LOCA	TION
SQS Quadrangle Name Francisco NRCS Soil Map Page	54	NRCS Soil Map S	ream Order 2
ounty Gibson	Township/City Barton		
SCELLANEOUS			
ase Flow Conditions? X Yes No Date of Last Precipitation _	7.28.05	Quantity 0.1"	
notograph Information			
evated Turbidity? ☐ Yes ☐ No Canopy (% open) 100%			
	er (Note lab sample no. or id a		
·		,	
eld Measures - Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.)	Conductiv	vity (µmhos/cm)
the sampling reach representative of the stream? $\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$	ot, please explain		
dditional comments/description of pollution impacts Row crop adjacent to	to both sides of stream		
OTIC EVALUATION			
erformed?			
	lamanders Observed?	Yes □ No V	oucher? ☐ Yes ☐ Ne
ish Observed? ☐ Yes ☐ No Voucher? ☐ Yes ☐ No Sa	oinvertebrates Observed?	☐ Yes ☐ No V	oucher?
rogs or Tadnoles \textstyle \textstyle Yes			
rogs or Tadpoles Ves No. Voucher? Yes Aquatic Macr			
rogs or Tadpoles			





Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3):

45

SITE NAME/LOCATON I-69 Section 1 RIVER BASIN Patoka (#05120209) DRAINAGE AREA (m12) SITE NUMBER sec1-s31 0.12 LENGTH OF **RIVER** RIVER STREAM REACH (ft) LONG CODE MILE Mark Pranckus, Erica SCORER COMMENTS Standing water 1-3' deep, ditch west of 850 DATE 8.16.05 Christensen NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions STREAM CHANNEL | NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING **⋈** RECENT OR NO RECOVERY **MODIFICATIONS** SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of HHEI boxes A & B. Metric PERCENT PERCENT **Points** BLDR SLABS [16 pts] $\boxtimes \Box$ SILT [3 pt] 20 BOULDER (>256 mm) [16 pts] LEAF PACK/WOODY DEBRIS [3 pts] | | | | | | BEDROCK [16 pt] FINE DETRITUS [3 pts] **Substrate** COBBLE (65-256 mm) [12 pts] CLAY OR HARDPAN [0 pt] 5 Max = 40GRAVEL (2-64 mm) [9 pts] MUCK [0 pts] SAND (<2mm) [6 pts] ARTIFICAL [3 pts] A+B Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE **TOTAL NUMBER OF** (B) SUBSTRATE TYPES **SUBSTRATE TYPES** Pool Depth Max = 30MAXIMUM POOL DEPTH (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or stormwater pipes) (Check ONLY one box) 15 >30 centimeters [20 pts] >5 cm - 10 cm [15 pts] 22.5 - 30 cm [30 pts] <5 cm [5 pts] NO WATER OR MOIST CHANNEL [0 pts] >10 - 22.5 cm [25 pts] **Bankfull** COMMENTS MAXIMUM POOL DEPTH (centimeters) 7.5 cm Width Max = 30BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box) 15 >4.0 meters (>13') [30 pts] >1.0 m - 1.5 m (>3' 3" - 4' 8" [15 pts] >3.0 m - 4.0 m (>9' 7" - 13' [25 pts] ≤1.0 m (≤ 3' 3") [5 pts] >1.5 m - 3.0 m (>9' 7" - 4' 8") [20 pts] AVERAGE BANKFULL WIDTH (meters) COMMENTS 1.5 m This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ★NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH **FLOODPLAIN QUALITY** L R (Per Bank) (Most Predominant per Bank) L R Wide >10 m Mature Forest, Wetland Conservation Tillage Moderate 5 - 10 m Immature Forest, Shrub or Old Field Urban or Industrial Ħ Residential Park, New Field Narrow <5 m $\boxtimes \boxtimes$ Open Pasture, Row Crop $\boxtimes \boxtimes$ None Fenced Pasture Mining or Construction COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box) Stream Flowing Moist Channel, Isolated Pools, No Flow (Intermittent) Subsurface Flow with Isolated Pools (Interstitial) Dry Channel, No Water (Ephemeral) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box) None 1.0 2.0 3.0 0.5 1.5 2.5 >3 STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) \boxtimes Flat to Moderate Severe (10 ft/100 ft) Moderate (2 ft/100 ft) Moderate to Severe

ADDITIONAL STREAM INFORMATION (This information must also be completed)	•
QHEI PERFORMED? ☐ Yes ☒ No OHEI Score	If Yes, Attach Completed QHEI Form
DOWNSTREAM DESIGNATED USE(S)	
☐ WWH Name	B
☐ EWH Name	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIREWATERSHE	ED AREA. CLEARLY MARK THE SITE LOCATION
USQS Quadrangle Name Francisco NRCS Soil Map Page 5	4 NRCS Soil Map Stream Order 2
County Gibson T	ownship/City Barton
MISCELLANEOUS	
Base Flow Conditions?	28.05 Quantity
	,
Photograph Information	
Elevated Turbidity? Yes No Canopy (% open) 100%	
Were samples collected for water chemistry? ☐ Yes ☒ No Lab Number	(Note lab sample no. or id and attach results)
Field Measures - Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.) Conductivity (μmhos/cm)
Is the sampling reach representative of the stream? ☑ Yes ☐ No If not,	
is the sampling reach representative of the sheard? Make I no.	hicase exhiaiii
Additional comments/description of pollution impacts Row crop adjacent to	both sides of the stream
BIOTIC EVALUATION	
	ions optional. NOTE: all voucher samples must be labeled with the site ID
Performed?	om the Primary Headwater Habitat Assessment Manual)
	manders Observed?
Frogs or Tadpoles	nvertebrates Observed?
Comments Regarding Biology	
DRAWINGS AND NARRATIVE DESCRIPTION OF	
Include important landmarks and other features of interest for site	evaluation and a narrative description of the stream's location.
FLOW	
	·
y. c. a9	Andrew the state of the state o
griss 71	
300	
r.c. ag	



SITE NAME/LOCATON I-69 Section 1	
SITE NUMBER sec1-s33 RIVER BASIN Highland Pigeon (#05140202) DRAINAGE AREA (m12) 0.03	
LENGTH OF RIVER RIVER STREAM REACH (ft) 200' LAT LONG CODE MILE	
DATE 8.16.05 SCORER Mark Pranckus, Erica COMMENTS Feeder to pond	-
NOTE: Complete All Items On This Form – Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instruction	ons
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO	O RECOVERY
MODIFICATIONS	
 SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. 	HHEI
<u>TYPE</u> <u>PERCENT</u> <u>TYPE</u> <u>PERCENT</u> SILT [3 pt] 50	Metric Points
□ □ BOULDER (>256 mm) [16 pts] □ □ □ LEAF PACK/WOODY DEBRIS [3 pts]	
□ □ BEDROCK [16 pt] □ □ FINE DETRITUS [3 pts] □ □ COBBLE (65-256 mm) [12 pts] □ □ CLAY OR HARDPAN [0 pt] 50	Substrate Max = 40
☐ GRAVEL (2-64 mm) [9 pts] ☐ MUCK [0 pts] ☐ SAND (<2mm) [6 pts] ☐ ARTIFICAL [3 pts]	5
	A+B
Total of Percentages of Bidr Slabs, Boulder, Cobble, Bedrock	
SCORE OF TWO MOST PREDOMINATE (A) 3 TOTAL NUMBER OF (B) 2 SUBSTRATE TYPES SUBSTRATE TYPES	
SOBSTRATE TIPES	Pool Depth
2. MAXIMUM POOL DEPTH (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Max = 30
evaluation. Avoid plunge pools from road culverts or stormwater pipes) (Check ONLY one box)	0
□ >30 centimeters [20 pts] □ >5 cm − 10 cm [15 pts] □ 22.5 − 30 cm [30 pts] □ <5 cm [5 pts]	
□ >10 - 22.5 cm [25 pts]	
COMMENTS MAXIMUM POOL DEPTH (centimeters) 0 cm	Bankfull Width Max = 30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box)	20
□ >4.0 meters (>13') [30 pts] □ >1.0 m − 1.5 m (>3' 3" − 4' 8" [15 pts] □ >3.0 m − 4.0 m (>9' 7" − 13' [25 pts] □ ≤1.0 m (≤ 3' 3") [5 pts] □ >1.5 m − 3.0 m (>9' 7" − 4' 8") [20 pts] □	
COMMENTS AVERAGE BANKFULL WIDTH (meters) 1.8 m	
This information must also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆ NOTE: River Left (L) and Right (R) as looking downs	stream☆
RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R □ Wide >10 m □ Moderate 5 − 10 m □ Immature Forest, Wetland □ Urban or Industrial □ Narrow <5 m	
COMMENTS	
FLOW REGIME (At Time of Evaluation) Stream Flowing Subsurface Flow with Isolated Pools (Interstitial) (Check ONLY one box) Moist Channel, Isolated Pools, No Flow (Intermittent) Dry Channel, No Water (Ephemeral)	
COMMENTS	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box) □ None □ 1.0 □ 2.0 □ 3.0 □ 0.5 □ 1.5 □ 2.5 □ >3	
STREAM GRADIENT ESTIMATE ☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Se	vere (10 ft/100 ft)

HEI PERFORMED? ☐ Yes ☒ No QHEI Score DOWNSTREAM DESIGNATED USE(S)		1636		
DOWNSTREAM DESIGNATED USE(S)		if Yes,	Attach Completed QHE	l Form
WWH Name	Distance from Evalua			
☐ CWH Name				
IAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIREWATER			ATION	
USQS Quadrangle Name Francisco NRCS Soil Map Page				
County Gibson	Township/CityColumb	ia		
NISCELLANEOUS				
Base Flow Conditions? 🛛 Yes 🗌 No Date of Last Precipitation	8.16.05	Quantity 0.2	4"	
Photograph Information				
Elevated Turbidity?				
Were samples collected for water chemistry? ☐ Yes ☒ No Lab Num	nber (Note lab sample no. or i	d and attach results)		
Field Measures - Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.)	Conduc	tivity (µmhos/cm)	
	f not, please explain			
Additional comments/description of pollution impacts Stream has buffer	r zone separating it from the	e road and adjacent	row crops	
BIOTIC EVALUATION				
Performed?				site ID
Fish Observed? ☐ Yes ☐ No Voucher? ☐ Yes ☐ No	Salamanders Observed?	☐ Yes ☐ No	Voucher?	□ No
Frogs or Tadpoles	acroinvertebrates Observed?	☐ Yes ☐ No	Voucher? ☐ Yes	□ No
Comments Regarding Biology				
		<u> </u>		
	- ··			
DRAWINGS AND NARRATIVE DESCRIPTIO	N OE STREAM REACH (Thi	e must be complete	d\	
Include important landmarks and other features of interest for				
FLOW				
			and the second second	
	- 1 × 2 × 2 × 2 × 2 × 2 × 2 × 2 × 2 × 2 ×		and the second second	_ war !-
CRP? 61d-P.	CAA		The second section of the s	
	The state of the s			

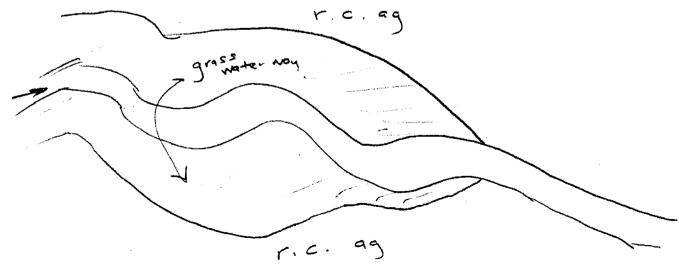
CRP? old-Pield



	_
9	

SITE NAME/LOCATON I-69 Section 1		
SITE NUMBER sec1-s36r1 RIVER BAS	SIN Highland Pigeon (#05140202) DRAINAGE AREA (m12) 0.01	
LENGTH OF STREAM REACH (ft) 200' LAT	LONG RIVER CODE RIVER MILE	
	Pranckus, Erica COMMENTS Channel south of 400	
Christe	tensen	
•	er to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions	
STREAM CHANNEL NONE / NATURAL CHAN	INNEL RECOVERED RECOVERING RECENT OR NO RECOVER	RY
MODIFICATIONS		
	f substrate present. Check ONLY two predominant substrate TYPE boxes trate types found (Max of 8). Final metric score is sum of	
TYPE PERCEN		-
☐ BLDR SLABS [16 pts] ☐ BOULDER (>256 mm) [16 pts]	🛛 🗌 SILT [3 pt] 100 Point	J
☐ ☐ BEDROCK [16 pt] ☐ ☐ COBBLE (65-256 mm) [12 pts]	□ □ FINE DETRITUS [3 pts] Substr □ □ CLAY OR HARDPAN [0 pt] Max =	
GRAVEL (2-64 mm) [9 pts]	□ □ MUCK [0 pts]	—
☐ ☐ SAND (<2mm) [6 pts]	ARTIFICAL [3 pts]	
Total of Percentages of Bidr Slabs, Boulder, Cobble, Bedrock		
	(A) 3 TOTAL NUMBER OF (B) 1	
SUBSTRATE TYPES	SUBSTRATE TYPES	4h
2. MAXIMUM POOL DEPTH (Measure the maximum	Pool Demonstration pool depth within the 61 meter (200 ft) evaluation reach at the time of Max =	
evaluation. Avoid plunge pools from road culverts of		
□ >30 centimeters [20 pts] □ 22.5 – 30 cm [30 pts]	☐ >5 cm – 10 cm [15 pts] ☐ <5 cm [5 pts]	
>10 – 22.5 cm [35 pts]	NO WATER OR MOIST CHANNEL [0 pts]	
COMMENTS	MAXIMUM POOL DEPTH (centimeters) 0 cm Widt	
3. BANK FULL WIDTH (Measured as the average of	of 3-4 measurements) (Check ONLY one box)	30
□ >4.0 meters (>13') [30 pts]	5 >1.0 m – 1.5 m (>3' 3" – 4' 8" [15 pts]	
>3.0 m - 4.0 m (>9' 7" - 13' [25 pts]	⊠ ≤1.0 m (≤ 3' 3") [5 pts]	
>1.5 m – 3.0 m (>9' 7" – 4' 8") [20 pts]		
COMMENTS 1.3, 0.5, 0.6	AVERAGE BANKFULL WIDTH (meters) 0.9 m	
	This information must also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY	☆NOTE: River Left (L) and Right (R) as looking downstream☆	
<u>RIPARIAN WIDTH</u>	FLOODPLAIN QUALITY	
LR (PerBank) LR □□ Wide>10 m □□	(Most Predominant per Bank) L R	
☐ ☐ Wide >10 m ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	Mature Forest, Wetland Gonservation Tillage Immature Forest, Shrub or Old Field Grban or Industrial	
□ □ Narrow <5 m	Residential Park, New Field 💢 🔯 Open Pasture, Row Crop Fenced Pasture 🔲 🔲 Mining or Construction	
COMMENTS	Tonce Laster	
FLOW REGIME (At Time of Evaluation)	(Check ONLY one box)	
Stream Flowing	Moist Channel, Isolated Pools, No Flow (Intermittent)	
Subsurface Flow with Isolated Pools (Interstitial)	I) Dry Channel, No Water (Ephemeral)	
COMMENTS	(Charle ONII V and hard	
SINUOSITY (Number of bends per 61 m (200 ft) of chan None 1.0	☐ 2.0 ☐ 3.0	
□ 0.5 □ 1.5	□ 2.5 ⊠ >3	
STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate	Moderate (2 ft/100 ft)	O ft)
	·	

DITIONAL STREAM INFORMATION (This information must also be com	•			
PEI PERFORMED? ☐ Yes ☑ No QHEI Score DOWNSTREAM DESIGNATED USE(S)		If Y	es, Attach Comp	oleted QHEI Form
WWH Name CWH Name		ed Stream		
APPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIREWATERS	SHED AREA. CLEARLY M	ARK THE SITE I	LOCATION	
SQS Quadrangle Name Francisco NRCS Soil Map Page	44	NRCS Soil M	lap Stream Orde	r
ounty Gibson	Township/City Columb	ia		
SCELLANEOUS				
ase Flow Conditions? 🛛 Yes 🗌 No Date of Last Precipitation	8.16.05	Quantity _	0.24"	
hotograph Information				
levated Turbidity? Yes No Canopy (% open) 100%			-	
/ere samples collected for water chemistry? ☐ Yes ☒ No Lab Numb	er (Note lab sample no or i	— d and attach resu	ilts)	
• – –	·		·	
ield Measures - Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.)	Con	ductivity (µmhos	
the sampling reach representative of the stream? 🔲 Yes 🔲 No 🔠 If n	ot, please explain			
dditional comments/description of pollution impacts Row crop adjacent	to both sides of the stream	m		
OTIC EVALUATION				
erformed?				d with the site ID
ish Observed? ☐ Yes ☐ No Voucher? ☐ Yes ☐ No Sa	alamanders Observed?	☐ Yes ☐ No	Voucher?	☐ Yes ☐ No
rogs or Tadpoles	roinvertebrates Observed?	☐ Yes ☐ No	Voucher?	☐ Yes ☐ No
Comments Regarding Biology				
				-
DRAWINGS AND NARRATIVE DESCRIPTION Include important landmarks and other features of interest for si				location.
LOW				





SITE NAME/LOCATON I-69 Section 1	
SITE NUMBER sec1-s35 RIVER BASIN Highland Pigeon (#05140202) DRAINAGE AREA (m12) 0.01	
LENGTH OF RIVER RIVER	
STREAM REACH (ft) 200' LAT LONG CODE MILE	
DATE 8.16.05 SCORER Christensen COMMENTS	
NOTE: Complete All Items On This Form – Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instruction	ons
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR N	O RECOVERY
MODIFICATIONS	
 SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. 	HHEI
TYPE PERCENT TYPE PERCENT	Metric Points
☐ ☐ BLDR SLABS [16 pts] ☐ SILT [3 pt] 50 ☐ BOULDER (>256 mm) [16 pts] ☐ LEAF PACK/WOODY DEBRIS [3 pts]	rollics
BEDROCK [16 pt] FINE DETRITUS [3 pts]	Substrate
☐ COBBLE (65-256 mm) [12 pts] ☐ CLAY OR HARDPAN [0 pt] 50 ☐ GRAVEL (2-64 mm) [9 pts] ☐ MUCK [0 pts]	Max = 40
SAND (<2mm) [6 pts] ARTIFICAL [3 pts]	5
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock	A+B
SCORE OF TWO MOST PREDOMINATE (A) 3 TOTAL NUMBER OF (B) 2	· · · · · · · · · · · · · · · · · · ·
SUBSTRATE TYPES SUBSTRATE TYPES	
	Pool Depth
2. MAXIMUM POOL DEPTH (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Max = 30
evaluation. Avoid plunge pools from road culverts or stormwater pipes) (Check ONLY one box)	0
□ >30 centimeters [20 pts] □ >5 cm − 10 cm [15 pts]	
☐ 22.5 – 30 cm [30 pts] ☐ <5 cm [5 pts] ☐ NO WATER OR MOIST CHANNEL [0 pts]	
COMMENTS MAXIMUM POOL DEPTH (centimeters) 0 cm	Bankfull
	Width Max = 30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box)	
□ >4.0 meters (>13') [30 pts] □ >1.0 m − 1.5 m (>3' 3" − 4' 8" [15 pts]	5
\Box >3.0 m – 4.0 m (>9 ¹ 7" – 13' [25 pts] \Box ≤1.0 m (≤ 3' 3") [5 pts]	
□ >1.5 m − 3.0 m (>9' 7" − 4' 8") [20 pts]	
COMMENTS AVERAGE BANKFULL WIDTH (meters) 0.7 m	
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆ NOTE: River Left (L) and Right (R) as looking down	stream☆
RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R	
□ □ Wide >10 m □ □ Mature Forest, Wetland □ □ Conservation Tillage □ □ Moderate 5 – 10 m □ □ Immature Forest, Shrub or Old Field □ □ Urban or Industrial	
☐ ☐ Moderate 5 – 10 m ☐ ☐ Immature Forest, Shrub or Old Field ☐ ☐ Urban or Industrial ☐ ☐ Narrow <5 m ☐ ☐ Residential Park, New Field ☐ ☐ Open Pasture, Row C	Сгор
	n
COMMENTS	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box)	
☐ Stream Flowing ☐ Moist Channel, Isolated Pools, No Flow (Intermittent) ☐ Subsurface Flow with Isolated Pools (Interstitial) ☑ Dry Channel, No Water (Ephemeral)	
-	
COMMENTS(Charles of hands are \$4 m (COM \$6) of charles (Charles OM) \(\text{Charles OM } \)	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box) None 1.0 2.0 3.0	
□ 0.5 □ 1.5 □ 2.5 ⋈ >3	
STREAM GRADIENT ESTIMATE	
☐ Flat (0.5 ft/100 ft)	evere (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This information must also be completed)	
QHEI PERFORMED? ☐ Yes ☑ No QHEI Score	If Yes, Attach Completed QHEI Form
DOWNSTREAM DESIGNATED USE(S)	
☐ WWH Name Distance from Evaluated Stream ☐ CWH Name Distance from Evaluated Stream ☐ EWH Name Distance from Evaluated Stream	
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIREWATERSHED AREA. CLEARLY MARK THE SI	ITE LOCATION
USQS Quadrangle Name Francisco NRCS Soil Map Page 44 NRCS Soil	oil Map Stream Order
County Gibson Township/City Columbia	
MISCELLANEOUS	
Base Flow Conditions? 🛛 Yes 🗌 No Date of Last Precipitation 8.16.05 Quantity	y <u>0.24"</u>
Photograph Information	
Elevated Turbidity?	
Were samples collected for water chemistry? ☐ Yes ☒ No Lab Number (Note lab sample no. or id and attach	results)
	·
Field Measures - Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.)	
Is the sampling reach representative of the stream? Yes No If not, please explain	
Additional comments/description of pollution impacts Row crop adjacent to both sides of the stream	
BIOTIC EVALUATION	
Performed? ☐ Yes ☒ No (If Yes, record all observations. Voucher collections optional. NOTE: all voucher sar number. Include appropriate field data sheets from the Primary Headwater Habitat As	mples must be labeled with the site ID ssessment Manual)
Fish Observed?	No Voucher? ☐ Yes ☐ No
Frogs or Tadpoles	No Voucher? ☐ Yes ☐ No
Comments Regarding Biology	
DRAWINGS AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be co	
FLOW	
r.c. 99	
The second secon	a principal and the second second The second secon
Q1155	1
- When	
may	The state of the s

r. c. ag



OFF NAMES OCCUPY 100 Control	
SITE NAME/LOCATON I-69 Section 1	
SITE NUMBER sec1-s36r2 RIVER BASIN Highland Pigeon (#05140202) DRAINAGE AREA (m12) 0.01	
LENGTH OF RIVER RIVER STREAM REACH (ft) 200' LAT LONG CODE MILE	
Mark Pranckus Frica	
DATE 8.16.05 SCORER Christensen COMMENTS downstream portion of 17, change in rip	arian zone
NOTE: Complete All Items On This Form – Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructio	20
MOTE: Complete All Reins Oil This Form - Refer to Field Evaluation Manual for Oillo's Phyth Streams for instruction	115
STREAM CHANNEL ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO	RECOVERY
MODIFICATIONS	
 SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. 	HHEI
TYPE PERCENT TYPE PERCENT	Metric
BLDR SLABS [16 pts] SILT [3 pt] 10	Points
□ BOULDER (>256 mm) [16 pts] □ □ LEAF PACK/WOODY DEBRIS [3 pts]	
BEDROCK [16 pt] FINE DETRITUS [3 pts]	Substrate
☐ ☐ COBBLE (65-256 mm) [12 pts] ☐ ☐ CLAY OR HARDPAN [0 pt] 90 ☐ ☐ GRAVEL (2-64 mm) [9 pts] ☐ ☐ MUCK [0 pts]	Max = 40
☐ ☐ GRAVEL (2-64 mm) [9 pts] ☐ ☐ MUCK [0 pts] ☐ ☐ ARTIFICAL [3 pts]	5
ONTO (-Zimin) to past	A+B
Total of Percentages of	
Bldr Slabs, Boulder, Cobble, Bedrock	
SCORE OF TWO MOST PREDOMINATE (A) 3 TOTAL NUMBER OF (B) 2	
SUBSTRATE TYPES SUBSTRATE TYPES	
	Pool Depth
2. MAXIMUM POOL DEPTH (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Max = 30
evaluation. Avoid plunge pools from road culverts or stormwater pipes) (Check ONLY one box)	0
□ >30 centimeters [20 pts] □ >5 cm - 10 cm [15 pts]	
22.5 – 30 cm [30 pts]	
☐ >10 – 22.5 cm [25 pts] ☐ NO WATER OR MOIST CHANNEL [0 pts]	-
COMMENTS MAXIMUM POOL DEPTH (centimeters) 0 cm	Bankfull
COMMENTSMAXIMOM FOOL BETTIT (certainleters)	Width
	Max = 30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box)	5
□ >4.0 meters (>13') [30 pts] □ >1.0 m − 1.5 m (>3' 3" − 4' 8" [15 pts]	
☐ >3.0 m - 4.0 m (>9' 7" - 13' [25 pts]	
>1.5 m - 3.0 m (>9' 7" - 4' 8") [20 pts]	
COMMENTS AVERAGE BANKFULL WIDTH (meters) 0.9 m	
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downst	room&
RIPARIAN ZONE AND FLOODPEAIN QUALITY	i Çallı A
RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R	
☑ ☐ Wide >10 m ☐ ☐ Mature Forest, Wetland ☐ ☐ Conservation Tillage ☐ ☐ Moderate 5 – 10 m ☐ ☐ Immature Forest, Shrub or Old Field ☐ ☐ Urban or Industrial	
☐ Moderate 5 – 10 m ☐ Immature Forest, Shrub or Old Field ☐ ☐ Urban or Industrial	
□ □ Narrow <5 m	рþ
COMMENTS	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box)	
Stream Flowing Moist Channel, Isolated Pools, No Flow (Intermittent)	
Subsurface Flow with Isolated Pools (Interstitial) Dry Channel, No Water (Ephemeral)	
COMMENTS	<u> </u>
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box)	
None □ 1.0 □ 2.0 □ 3.0	
0.5 1.5 2.5 >3	
STREAM GRADIENT ESTIMATE	
	ere (10 ft/100 ft)
a contract of the contract of	

ADDITIONAL STREAM INFORMATION (T	his information must also be comp	leted)			
QHEI PERFORMED? ☐ Yes ☐ No	QHEI Score		If Ye	s, Attach Compl	leted QHEI Form
DOWNSTREAM DESIGNATED L	JSE(S)				
		Distance force Evelvets	d Ctroom		_ _
EWH Name		Distance from Evaluate			
MAPPING: ATTACH COPIES OF MAPS,	INCLUDING THE ENTIREWATERS	IED AREA. CLEARLY MA	RK THE SITE L	OCATION	
USQS Quadrangle Name Francisco	NRCS Soil Map Page	44	_ NRCS Soil Ma	p Stream Order	
County Gibson		Township/City Columbia	ı		
MISCELLANEOUS					
Base Flow Conditions? ☐ Yes ☐ No	Date of Last Precipitation _	8.16.05	Quantity	0.24"	
Photograph Information					
Elevated Turbidity? ☐ Yes ☒ No	Canopy (% open)		<u> </u>		
Were samples collected for water chemistr	ry? ☐ Yes ☒ No Lab Numbe	r (Note lab sample no. or id	and attach result	s)	
Field Measures - Temp (°C)	Dissolved Oxygen (mg/l)	pH (S.U.)	Cond	uctivity (µmhos/	/cm)
Is the sampling reach representative of the	e stream? ⊠ Yes □ No If no	t, please explain			-
Additional comments/description of pollution	on impacts				
BIOTIC EVALUATION					
	ecord all observations. Voucher colle Include appropriate field data sheets				d with the site ID
Fish Observed? Yes No	Voucher? ☐ Yes ☐ No Sa	amanders Observed? [☐ Yes ☐ No	Voucher?	☐ Yes ☐ No
Frogs or Tadpoles	√oucher? ☐ Yes Aquatic Macro	invertebrates Observed?	☐ Yes ☐ No	Voucher?	☐ Yes ☐ No
Comments Regarding Biology					
	AND NARRATIVE DESCRIPTION (ocation
moreco important fenericarea		, vialenton and a nanan v	o accompact o		
FLOW -					
	nado	100			
		(CC)			
$\mathcal{L}(\mathcal{L}(\mathcal{L}))$	とりできて	7000	70		
H TONO	Ly Ly			•	

r.c.ag



SITE NAME/LOCATON I-69 Section 1	
SITE NUMBER sec1-s37 RIVER BASIN Highland Pigeon (#05140202) DRAINAGE AREA (m12) 0.04	
LENGTH OF RIVER RIVE	
STREAM REACH (ft) 200' LAT LONG CODE MILE	
DATE 8.17.05 SCORER COMMENTS Drainage swale east of 360/850	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instruction	tions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR	
MODIFICATIONS	1
 SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. 	HHEI
<u>TYPE</u> <u>PERCENT</u> <u>TYPE</u> <u>PERCENT</u> ☐ ☐ BLDR SLABS [16 pts]	Metric Points
□ BOULDER (>256 mm) [16 pts] □ □ LEAF PACK/WOODY DEBRIS [3 pts] □ □	
BEDROCK [16 pt] FINE DETRITUS [3 pts]	Substrate
□ COBBLE (65-256 mm) [12 pts] □ CLAY OR HARDPAN [0 pt] 50 □ GRAVEL (2-64 mm) [9 pts] □ MUCK [0 pts]	Max = 40
□ □ SAND (<2mm) [6 pts] □ □ ARTIFICAL [3 pts]	5
Total of Percentages of	A+B
Bidr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE (A) 3 TOTAL NUMBER OF (B) 2	
SUBSTRATE TYPES SUBSTRATE TYPES SUBSTRATE TYPES	
	Pool Depth
2. MAXIMUM POOL DEPTH (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Max = 30
evaluation. Avoid plunge pools from road culverts or stormwater pipes) (Check ONLY one box)	0
□ >30 centimeters [20 pts] □ >5 cm − 10 cm [15 pts] □ 22.5 − 30 cm [30 pts] □ <5 cm [5 pts]	
>10 – 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	
COMMENTS MAXIMUM POOL DEPTH (centimeters) 0 cm	Bankfull Width
	Max = 30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box)	5
□ >4.0 meters (>13') [30 pts] □ >1.0 m − 1.5 m (>3' 3" − 4' 8" [15 pts]	
□ >3.0 m - 4.0 m (>9' 7" - 13' [25 pts]	
COMMENTS AVERAGE BANKFULL WIDTH (meters) 0.7 m	
This information must also be completed	l
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆ NOTE: River Left (L) and Right (R) as looking dow	∕nstream☆
RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R	
☐ ☐ Wide >10 m ☐ ☐ Mature Forest, Wetland ☐ ☐ Conservation Tillag	e
☐ Moderate 5 – 10 m ☐ Immature Forest, Shrub or Old Field ☐ ☐ Urban or Industrial ☐ ☐ Narrow <5 m ☐ ☐ Residential Park, New Field ☐ ☐ Open Pasture, Row	Сгор
☑ None ☐ ☐ Fenced Pasture ☐ ☐ Mining or Construct	
COMMENTS	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box)	
☐ Stream Flowing ☐ Moist Channel, Isolated Pools, No Flow (Intermittent)	
□ Subsurface Flow with Isolated Pools (Interstitial) □ Dry Channel, No Water (Ephemeral)	
COMMENTS	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box)	
□ None □ 1.0 □ 2.0 □ 3.0 □ 0.5 □ 1.5 □ 2.5 □ >3	
STREAM GRADIENT ESTIMATE	
☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐	Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This information must also be com	pleted)	-
QHEI PERFORMED? ☐ Yes ☒ No QHEI Score		If Yes, Attach Completed QHEI Form
DOWNSTREAM DESIGNATED USE(S)		
☐ WWH Name ☐ CWH Name ☐ EWH Name	Distance from Englanded Otos and	
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIREWATERS	HED AREA. CLEARLY MARK THE SI	ITE LOCATION
USQS Quadrangle Name Francisco NRCS Soil Map Page	44 NRCS S	oil Map Stream Order
County Gibson	Township/City Columbia	
MISCELLANEOUS		
	8.16.05 Quantity	y <u>0.24"</u>
Photograph Information		
Elevated Turbidity?		
Were samples collected for water chemistry? ☐ Yes ☒ No Lab Number	er (Note lab sample no. or id and attach	results)
Field Measures - Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.)	Conductivity (µmhos/cm)
Is the sampling reach representative of the stream? ☐ Yes ☐ No If n	ot, please explain	
Additional comments/description of pollution impacts Row crop agriculture	re adjacent to both sides of the stream	n
BIOTIC EVALUATION		· · · · · · · · · · · · · · · · · · ·
Performed? ☐ Yes ☒ No (If Yes, record all observations. Voucher collenumber. Include appropriate field data sheets		
Fish Observed? ☐ Yes ☐ No Voucher? ☐ Yes ☐ No Sa	lamanders Observed? Yes 1	No Voucher? ☐ Yes ☐ No
Frogs or Tadpoles	oinvertebrates Observed?] No Voucher? ☐ Yes ☐ No
Comments Regarding Biology		
DRAWINGS AND NARRATIVE DESCRIPTION Include important landmarks and other features of interest for significant to the state of the state	e evaluation and a narrative descripti	
Waster way		

DEM
ACCOUNT OF A PART OF A PART A AND LESS

OWQ Biological Studies QHEI (Qualitative Habitat Evaluation Index)

Sample #	bio		Stream Name sec1-s39r1		Location Section 1	of proposed I-69 co	rridor
	0 1 7 1					pp	
Surveyor	Sample Date	County	Macro Sample	: Гуре	⊠ Habitat	QHEI Score:	32
MP, EC	8.17.05	Gibson	N/A		Complete		
1 – Substrate	(20 points m	naximum)			Su	bstrate Score:	13
		ol & 1 Predominant R		Substra	te Quality (check only 1	I, or check 2 and A	VERAGE)
Check all that	are present	P=Pool, R=R			Substrate		
Predominant P R	Present P R	<u>Predominant</u> <u>P</u> R	<u>Present</u> <u>P</u> R	│			acustrine (0) hale (-1)
☐ ☐ Bidrs/Sia		🔲 🔯 Hardpan (4)		☐ Wetland	ds (0) 🔲 Rip/R	ap (0) 🗍 C	oal fines (-2)
☐ ☐ Boulders	• • = =	☐ ☐ Detritus (3)		Silt C	<u>cover</u> ilt heavy (-2)	Embeddedne	
☐ Gravel (7	·	☐ ☐ Silt (2)	$\boxtimes \Box$	□ S	ilt moderate (-1)		· (-1)
☐ ☐ Sand (6)		☐ ☐ Sludge (1)			ilt normal (0) ilt free (1)	☐ Low/Norr 図 None (1)	nal (0)
☐ ☐ Bedrock	• •	☐ ☐ Artificial (0)				Z None (1)	
NOTE: Ignore slu sources; score ba			substrates present	t (2)			
2 – Instream	Cover (20 po	ints maximum)			Instream	Cover Score:	0
Type (check ALL 1		□ B	□ 0 -t (*)		Amount (check only		GE)
☐ Undercut bank ☐ Overhanging v		☐ Deep pools (2)☐ Rootwads (1)	☐ Oxbows (1)☐ Aquatic macro	phytes (1)		sive >75% (11) ate 25-75% (7)	
Shallows (in s	low water) (1)	Boulders (1)	Logs and wood	ly debris (1)		e 5-25% (3) `´	
☐ Rootmats (1)			s of stream with ins lepth, so no value o		are Nearly	absent <5% (1)	
3 - Channel I	Morphology ((20) (check only one per	category, OR two and	AVERAGE)	C	hannel Score:	5
Sinuosity ☐ High (4)	Development Excellent (Channelization (7) ☐ None (6)	Stab □ i	<u>ollity</u> High (3)	Modifications/Othe ⊠ Snagging	<u>r</u> □ Impound	
Moderate (3)	Good (5)	Recovered (4)	_ I	Moderate (2)	Relocation	☐ Islands	•
	☐ Fair (3) 図 Poor (1)	☐ Recovering (3		Low (1)	Canopy remova □ Dredging	ıl ☐ Leveed ⊠ Banksh	aning
Comments:						el modifications	~p9
4 – Riparian 2	Zone & Bank	Erosion (10 poin	ts maximum)		R	iparian Score:	4
	ooking downstre	am (for each category, c	heck only one per l	bank, OR two	per bank and AVERAG		-
Riparian width L R (per bank)		Erosion/Runoff-Floodpl L R (most predomina	ain Quality (past 10 ant per bank) L	<u>0 ft Riparian)</u> R	<u>B</u>	ank Erosion R (per bank)	
☐ ☐ Wide >50 r		☐ Forest, swamp (3) 🗆 🗆	☐ Conserv	/ation tillage (1)	None or little ((3)
☐ ☐ Moderate 1	· ·	☑ Shrub or old field☐ Residential, part			r industrial (0) construction (0)		(1)
☐ ☐ Very narro		☐ ☐ Fenced pasture			esture/rowcrop (0)		···
⊠ ⊠ None (0)		Comments:					
<u>5a – Pool/Gli</u>	de Quality (1	<u>2 points maximur</u>	<u>n)</u>		Poe	ol/Glide Score:	0
Max Pool Depth (c ☐ >1 m (6)	check one)	Morphology (check of OR check two and A			un/Riffle Current Velocit lies (1)	ty (check all that ap Torrential	
0.7-1 m (4)		Pool width > riffle		=	t (1)	☐ Interstitial	
0.4-0.7 m (2) 0.2-0.4 m (1)		☐ Pool width = riffle			lerate (1) w (1)	☐ Intermitte	
⊠ <0.2 m (pool =	: 0) Cor	nments: No pools	Width (0)		" () /	M No poorte	<u> </u>
5b – Riffle/Ru	un Quality (8)	(check only one per cate	orv. OR two and AVE	RAGE)	Rif	fle/Run Score:	0
Riffle/Run Depth			Substrate		Riffle/Run Embedde		
	cm, Max > 50 cm	(4) Stable	- eg. cobble, bould		Extensive (-1)	Normal/Lov	w (1)
☐ Generally >10 ☐ Generally 5-10	cm, Max < 50 cm) cm (1)		table – eg. pea grav ble – eg. sand, grav		Moderate (0)	 ☐ None (2) ☑ No riffle (0))
☑ Generally <5 c	• •		ın complexes				
6 – Gradient	(10 points m	aximum)			G	Gradient Score:	10
Average width:	1.5	Grad	ient: 26.4 (ft/mile)	Drainage A	rea: 5.11 (square	miles)
Comments: No	information on fie	eld data sheet					



OWQ Biological Studies QHEI (Qualitative Habitat Evaluation Index)

Surveyor Sample Date County Macro Sample Type MP, EC 8.17.05 Gibson N/A Impacts/Miscellaneous Major Suspected Impacts (check all that apply) None Suburban Subjective Rating (1-10): 5	Section 1 of proposed I-69 corridor Habitat Complete QHEI Score: 32
MP, EC 8.17.05 Glbson N/A Impacts/Miscellaneous Major Suspected Impacts (check all that apply)	Complete QHEI Score: 32
Impacts/Miscellaneous Major Suspected Impacts (check all that apply)	Complete
Major Suspected Impacts (check all that apply)	
☐ None ☐ Suburban Subjective Rating (1-10): 5	Miscellaneous QHEI Information
☐ Industrial ☐ Channelization	% Riffle: Is reach representativ
☐ WWTP ☐ Riparian Removal Aesthetic Rating (1-10): 5 ☑ Agricultural ☐ Flow Alteration	% Run: 90 of stream?
☐ Livestock ☐ CSOs Canopy Cover (% Open): 100°	%
☐ Construction ☐ Landfills ☐ Urban Runoff ☐ Natural	% Pool: 10
General QHEI Notes:	
Pollution Impact Comments:	



_		-
3	35	

SITE NAME/LOCATON I-69 Section 1				
SITE NUMBER sec1-s41 RIVER BASIN Highland Pigeon (#05140202) DRAINAGE AREA (m1²) 0.22				
LENGTH OF RIVER RIVER STREAM REACH (ft) 200' LAT LONG CODE MILE				
DATE 8.17.05 SCORER Mark Pranckus, Erica COMMENTS Swale north of 300 S, tributary to West	Fork Keg Creek			
NOTE: Complete All Items On This Form – Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instruction	ons			
STREAM CHANNEL INONE / NATURAL CHANNEL IN RECOVERED IN RECOVERING IN RECENT OR NO	RECOVERY			
MODIFICATIONS				
 SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. 	HHEI			
TYPE PERCENT TYPE PERCENT □ □ BLDR SLABS [16 pts] □ SILT [3 pt] 50	Metric Points			
□ □ BOULDER (>256 mm) [16 pts] □ □ LEAF PACK/WOODY DEBRIS [3 pts]				
□ □ BEDROCK [16 pt] □ □ FINE DETRITUS [3 pts] □ □ CLAY OR HARDPAN [0 pt] 50	Substrate Max = 40			
GRAVEL (2-64 mm) [9 pts] MUCK [0 pts] MUCK [0 pts]	5			
□ SAND (<2mm) [6 pts] □ □ □ ARTIFICAL [3 pts]	A+B			
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock				
SCORE OF TWO MOST PREDOMINATE (A) 3 TOTAL NUMBER OF (B) 2				
SUBSTRATE TYPES SUBSTRATE TYPES	Pool Depth			
2. MAXIMUM POOL DEPTH (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or stormwater pipes) (Check ONLY one box)	Max = 30			
□ >30 centimeters [20 pts] □ >5 cm − 10 cm [15 pts]				
□ 22.5 – 30 cm [30 pts] □ <5 cm [5 pts] □ <10 – 22.5 cm [25 pts] □ NO WATER OR MOIST CHANNEL [0 pts]				
COMMENTS MAXIMUM POOL DEPTH (centimeters) 0 cm	Bankfull Width Max = 30			
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box)	30			
COMMENTS 4.3, 4.0, 5.3 meters AVERAGE BANKFULL WIDTH (meters) 4.5 m				
This information must also be completed				
RIPARIAN ZONE AND FLOODPLAIN QUALITY *\Delta\timesNOTE: River Left (L) and Right (R) as looking downs	tream☆			
RIPARIAN WIDTH FLOODPLAIN QUALITY				
L R (Per Bank) L R (Most Predominant per Bank) L R □ □ Wide >10 m □ □ Mature Forest, Wetland □ □ Conservation Tillage				
☐ Moderate 5 – 10 m ☐ ☐ Immature Forest, Shrub or Old Field ☐ ☐ Urban or Industrial	.			
☐ Narrow <5 m ☐ Residential Park, New Field ☑ ☑ Open Pasture, Row Ci ☑ ☑ None ☐ Fenced Pasture ☐ ☐ Mining or Construction				
COMMENTS				
FLOW REGIME (At Time of Evaluation) Stream Flowing Subsurface Flow with Isolated Pools (Interstitial) (Check ONLY one box) Moist Channel, Isolated Pools, No Flow (Intermittent) Dry Channel, No Water (Ephemeral)				
COMMENTS				
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box) ☑ None ☐ 1.0 ☐ 2.0 ☐ 3.0 ☐ 0.5 ☐ 1.5 ☐ 2.5 ☐ >3				
STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Moderate to Severe Se	vere (10 ft/100 ft)			

ADDITIONAL CIPEAN INCODMATION (This information must be be assembled to	
ADDITIONAL STREAM INFORMATION (This information must also be completed) QHEI PERFORMED? Yes No QHEI Score	If Yes, Attach Completed QHEI Form
PERFORMED? ☐ Yes ☑ No QHEI Score DOWNSTREAM DESIGNATED USE(S)	ii res, Attaur Completed QHEI Port
☐ WWH Name Distance from Evaluate	ed Stream
CWH Name Distance from Evaluate	ed Stream
☐ EWH Name Distance from Evaluate MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIREWATERSHED AREA. CLEARLY MA	
USQS Quadrangle Name Francisco NRCS Soil Map Page 44	
County Gibson Township/City Columbia	
WISCELLANEOUS	<u> </u>
Base Flow Conditions? ⊠ Yes □ No Date of Last Precipitation 8.16.05	Quantity 0.24"
Photograph Information	Quality VIET
Elevated Turbidity? ☐ Yes ☒ No Canopy (% open) 100%	
Were samples collected for water chemistry? ☐ Yes ☒ No Lab Number (Note lab sample no. or id	
	•
Field Measures - Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.)	Conductivity (µmhos/cm)
Is the sampling reach representative of the stream?	
Additional comments/description of pollution impacts Row crops adjacent to both sides of the stream to both sides	m
BIOTIC EVALUATION	
(If Yes, record all observations, Voucher collections optional, NOTE: all	voucher samples must be labeled with the site ID
Performed?	er Habitat Assessment Manual)
Fish Observed?	☐ Yes ☐ No Voucher? ☐ Yes ☐ No
Frogs or Tadpoles Observed? Yes No Voucher? Yes Aquatic Macroinvertebrates Observed?	☐ Yes ☐ No Voucher? ☐ Yes ☐ No
Comments Regarding Biology	
DRAWINGS AND NARRATIVE DESCRIPTION OF STREAM REACH (This Include important landmarks and other features of interest for site evaluation and a narrative	
FLOW	
r. c. ag	
	THE KANDER
- grass leg	
Cattails & wethard veg	
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	V N XX V N V V

r. c. ag



OUTE MANUEL OCATON L. LCO Continue A	
SITE NAME/LOCATON I-69 Section 1 SITE NUMBER sec1-s42 RIVER BASIN Highland Pigeon (#05140202) DRAINAGE AREA (m12) 0.04	
LENGTH OF RIVER BASIN INGINIARY INGINIARY RIVER RIVER	2
STREAM REACH (ft) 200' LAT LONG CODE MILE	
DATE 8.17.05 SCORER Mark Pranckus COMMENTS Tributary north of 1-64, into 26	
NOTE: Complete All Items On This Form – Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instruct	ions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR N	IO RECOVERY
MODIFICATIONS	1
 SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. 	HHEI
TYPE PERCENT TYPE PERCENT	Metric Points
□ □ BLDR SLABS [16 pts] ☑ SILT [3 pt] 50 □ □ BOULDER (>256 mm) [16 pts] ☑ LEAF PACK/WOODY DEBRIS [3 pts] 25	Folia
☐ BEDROCK [16 pt] ☐ FINE DETRITUS [3 pts]	Substrate
☐ COBBLE (65-256 mm) [12 pts] ☐ CLAY OR HARDPAN [0 pt] 25 ☐ GRAVEL (2-64 mm) [9 pts] ☐ MUCK [0 pts]	Max = 40
SAND (<2mm) [6 pts] ARTIFICAL [3 pts]	9
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock	A+B
SCORE OF TWO MOST PREDOMINATE (A) 6 TOTAL NUMBER OF (B) 3	
SUBSTRATE TYPES SUBSTRATE TYPES	
	Pool Depth
2. MAXIMUM POOL DEPTH (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or stormwater pipes) (Check ONLY one box)	Max = 30
	0
□ >30 centimeters [20 pts] □ >5 cm − 10 cm [15 pts] □ 22.5 − 30 cm [30 pts] □ <5 cm [5 pts]	<u> </u>
☐ >10 – 22.5 cm [25 pts]	
COMMENTS MAXIMUM POOL DEPTH (centimeters) 0 cm	Bankfull Width Max = 30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box)	20
□ >4.0 meters (>13') [30 pts] □ >1.0 m − 1.5 m (>3' 3" − 4' 8" [15 pts] □ >3.0 m − 4.0 m (>9' 7" − 13' [25 pts] □ ≤1.0 m (≤ 3' 3") [5 pts] □ >1.5 m − 3.0 m (>9' 7" − 4' 8") [20 pts]	
COMMENTS 2.7, 3.1, 3.2 meters AVERAGE BANKFULL WIDTH (meters) 3.0 m	
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking down	nstream弁
RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R	
☐ ☐ Wide >10 m ☐ ☐ Conservation Tillage ☐ ☐ Moderate 5 – 10 m ☐ ☐ Immature Forest, Shrub or Old Field ☐ ☐ Urban or Industrial	
□ □ None □ □ Fenced Pasture □ □ Mining or Construction	on
COMMENTS Trees, red maple, approximately 20' off-center	
FLOW REGIME (At Time of Evaluation) Stream Flowing Subsurface Flow with Isolated Pools (Interstitial) (Check ONLY one box) Moist Channel, Isolated Pools, No Flow (Intermittent) Dry Channel, No Water (Ephemeral)	
COMMENTS	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box)	
□ None □ 1.0 □ 2.0 □ 3.0 □ 0.5 □ 1.5 □ 2.5 □ >3	
STREAM GRADIENT ESTIMATE	
	evere (10 ft/100 ft)

	mpleted)			
PHEI PERFORMED? ☐ Yes ☑ No QHEI Score DOWNSTREAM DESIGNATED USE(S)		If Yes	s, Attach Comple	ted QHEI Form
□ WWH Name	Distance from Evaluat	ed Stream		
☐ CWH Name	Distance from Finalizat	ed Stream		
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIREWATER			CATION	
USQS Quadrangle Name Francisco NRCS Soil Map Page	35	NRCS Soil Maj	o Stream Order	_1
County Gibson	Township/CityColumb	ia		
MISCELLANEOUS				
Base Flow Conditions? ☐ Yes ☐ No Date of Last Precipitation	8.16.05	Quantity 0	.24"	
Photograph Information		<u> </u>		
Elevated Turbidity? ☐ Yes ☒ No Canopy (% open)				
Were samples collected for water chemistry? ☐ Yes ☒ No Lab Num	ber (Note lab sample no. or i	d and attach results	s)	
Field Measures - Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.)	Condu	uctivity (µmhos/c	m)
is the sampling lead representative of the steam:	not, please explain			
Additional comments/description of pollution impacts Row crop adjacen	t to both sides of the stream	n, beyond a narro	w wooded ripa	rian zone
NOTIC FVALUATION				
Performed? ☐ Yes ☒ No (If Yes, record all observations. Voucher co				with the site ID
number. Include appropriate field data shee	•	_	ŕ	
Fish Observed? Yes No Voucher? Yes No	Salamanders Observed?	☐ Yes ☐ No	Voucher?	☐ Yes ☐ No
Frogs or Tadpoles ☐ Yes ☐ No Voucher? ☐ Yes Aquatic Ma Observed?	croinvertebrates Observed?	☐ Yes ☐ No	Voucher?	☐ Yes ☐ No

DRAWINGS AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location.

FLOW -



Primary Headwater Habitat Evaluation Form

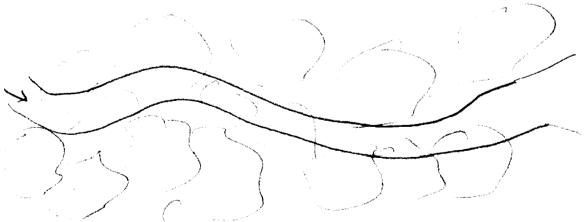
HHEI Score (sum of metrics 1, 2, 3):

25

SITE NAME/LOCATON I-69 Section 1 RIVER BASIN Highland Pigeon (#05140202) 0.10 SITE NUMBER sec1-s43r1 DRAINAGE AREA (m12) LENGTH OF RIVER **RIVER** STREAM REACH (ft) LAT LONG CODE MILE Mark Pranckus, Erica SCORER COMMENTS DATE 8.17.05 Tributary to 26 Christensen NOTE: Complete All Items On This Form – Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions STREAM CHANNEL | NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY MODIFICATIONS SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of HHEI boxes A & B. Metric PERCENT **PERCENT Points** BLDR SLABS [16 pts] SILT [3 pt] BOULDER (>256 mm) [16 pts] $\boxtimes \Box$ LEAF PACK/WOODY DEBRIS [3 pts] $\Box\Box$ 25 BEDROCK [16 pt] FINE DETRITUS [3 pts] Substrate \Box COBBLE (65-256 mm) [12 pts] $\boxtimes \Box$ CLAY OR HARDPAN [0 pt] 75 Max = 40GRAVEL (2-64 mm) [9 pts] MUCK [0 pts] ARTIFICAL [3 pts] SAND (<2mm) [6 pts] A+B Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE **TOTAL NUMBER OF** (B) **SUBSTRATE TYPES SUBSTRATE TYPES Pool Depth** Max = 30MAXIMUM POOL DEPTH (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or stormwater pipes) (Check ONLY one box) n >30 centimeters [20 pts] >5 cm - 10 cm [15 pts] 22.5 - 30 cm [30 pts] <5 cm [5 pts] ቨ $\overline{\boxtimes}$ NO WATER OR MOIST CHANNEL [0 pts] >10 - 22.5 cm [25 pts] Bankfull COMMENTS MAXIMUM POOL DEPTH (centimeters) 0 cm Width Max = 30BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box) 20 >4.0 meters (>13') [30 pts] >1.0 m - 1.5 m (>3' 3" - 4' 8" [15 pts] >3.0 m - 4.0 m (>9' 7" - 13' [25 pts] ≤1.0 m (≤ 3' 3") **[5 pts**] >1.5 m - 3.0 m (>9' 7" - 4' 8") [20 pts] \boxtimes AVERAGE BANKFULL WIDTH (meters) COMMENTS 1.0, 1.0, 2.0, 2.2 meters 1.6 m This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) (Most Predominant per Bank) L R L R Wide >10 m $\boxtimes \boxtimes$ Mature Forest, Wetland Conservation Tillage Moderate 5 - 10 m 回 Immature Forest, Shrub or Old Field Urban or Industrial Residential Park, New Field Open Pasture, Row Crop Narrow <5 m None Fenced Pasture Mining or Construction COMMENTS Trees, sugar and red maple, approximately 20' off-center FLOW REGIME (At Time of Evaluation) (Check ONLY one box) Moist Channel, Isolated Pools, No Flow (Intermittent) Stream Flowing Subsurface Flow with Isolated Pools (Interstitial) 冈 Dry Channel, No Water (Ephemeral) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box) None 1.0 2.0 3.0 茵 1.5 2.5 >3 STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate Severe (10 ft/100 ft) П Moderate (2 ft/100 ft) Moderate to Severe

	☐ Yes 🖾 No	QHEI Score			If Y	es, Attach Comp	oleted QHEI Form
DOWNSTREAM	DESIGNATED USE	E(S)					
C OVALLATIONS				Distance from I	Evaluated Stream Evaluated Stream Evaluated Stream		
MAPPING: ATTACH COP	IES OF MAPS, INC	LUDING THE EN	TIREWATER	RSHED AREA. CLEA	RLY MARK THE SITE	LOCATION	
USQS Quadrangle Name	Francisco	NRCS S	oil Map Page	35	NRCS Soil N	lap Stream Orde	er
County Gibson				Township/CityC	olumbia		
WISCELLANEOUS							
Base Flow Conditions?	⊠ Yes □ No	Date of Last F	Precipitation	8.16.05	Quantity	0.24"	
Photograph Information _							
Elevated Turbidity?	Yes ⊠ No	Canopy (% o	oen) 0%			**	
Were samples collected for					no. or id and attach resi	ılte)	
Field Measures - Temp ($^{\circ}$	C)	Dissolved Oxygen	(mg/l)	pH (S.U.) _	Cor	ductivity (µmhos	s/cm)
Is the sampling reach repr	esentative of the st	ream? 🛚 🖾 Ye	s 🗌 No 🏻 II	f not, please explain			
		·					
Additional comments/desc	ription of pollution i	mpacts					-
BIOTIC EVALUATION		 					
Performed? ☐ Yes ⊠	No (If Yes, reco	ord all observations clude appropriate t	s. Voucher co ield data she	ollections optional. NC ets from the Primary H	TE: all voucher sample eadwater Habitat Asses	s must be labele sment Manual)	ed with the site ID
Fish Observed?	es □ No Vou	ıcher? 🔲 Yes	□ No	Salamanders Observe	d? ☐ Yes ☐ No	Voucher?	☐ Yes ☐ No
Frogs or Tadpoles Observed?	Yes □ No Voι	icher?	Aquatic Ma	acroinvertebrates Obse	rved? Yes N	o Voucher?	☐ Yes ☐ No
000011001	logv						
Comments Regarding Bio	- J,						
							







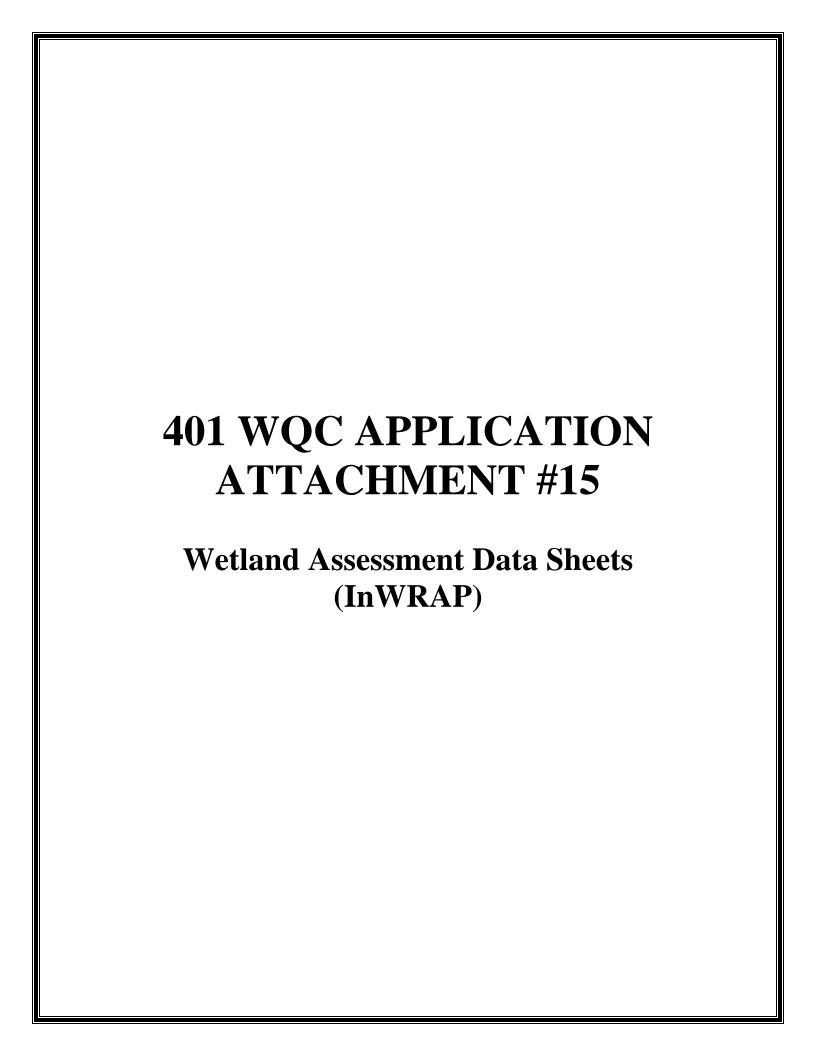
Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):

_	_
~~	^
·	J

SITE N	NAME/LOCATON	I-69 Sec	ction 1									
SITE	NUMBER Sec 1-	s44	RIV	ER BASIN	Highla	nd Pigeon (#05	140202)	DRAIN	AGE ARE	A (m1²)	0.25	
LENG	TH OF							RIV			RIVE	
STRE	AM REACH (ft)	200'		LAT Mark Pran	okus Eri	LONG		COI	DE		MILE	
DATE	8.17.05		SCORER .	Christens		CO	MMENTS	Swale no	orth of 25	0 S, tribu	tary to W	est Fork Keg Creek
	Complete All It	_				-	_					
STREA	M CHANNEL [NONE	/ NATURA	L CHANNE		RECOVERE) ⊔	RECOVE	RING	⊠ REC	ENT OR	NO RECOVERY
MODIF	ICATIONS											
(M	BSTRATE (Estima ax of 32). Add tota kes A & B.	ate perce al number	nt of every of significan	type of sui nt substrate	ostrate po types four	resent. Check nd (Max of 8).	ONLY <u>two</u> Final metri	predomina ic score is	nt substra sum of	ate <i>TYPE</i>	boxes	HHEI
TYPE			<u>F</u>	PERCENT	<u>TYPE</u>					PERCEN	Ι	Metric
	BLDR SLABS [1 BOULDER (>25)		ntel _			SILT [3 pt] LEAF PACK	MANOODV	DEDDIC FO		50		Points
	BEDROCK [16 p		hrel			FINE DETR			hrs] _			Substrate
	COBBLE (65-25				$\boxtimes \square$	CLAY OR H		[0 pt]	_	50	_	Max = 40
	GRAVEL (2-64 r SAND (<2mm) [<u> </u>			MUCK [0 pt ARTIFICAL			_		_	5
	Total of Percen	tages of					[- p]		_			A+B
	Ir Slabs, Boulder, C	•				 -						
SC	ORE OF TWO M SUBSTRA			'E (A)	3		AL NUME STRATE		(B)	2		
		- DTII /44.						.				Pool Depth Max = 30
	AXIMUM POOL DE aluation. Avoid plu						meter (200	υπ) evalua		c n at tne CONLY or		0
	>30 centimeters [3					>5 cm – 10 cn	1 [15 pts]					<u> </u>
H	22.5 – 30 cm [30 >10 – 22.5 cm [25					<5 cm [5 pts] NO WATER C	R MOIST	CHANNEL	[0 pts]			
	-	· ·	_									
COM	MENTS				MAX	IMUM POOL DE	EPTH (cent	timeters)		0 0	m	Bankfull Width
3. B/	ANK FULL WIDTH	(Measure	d as the ave	erage of 3-4	measure	ements)			(Checl	c ONLY or	ne box)	Max = 30
Ø	>4.0 meters (>13") [30 pts]		•		>1.0 m – 1.5 r	n (>3' 3" –	4' 8" [15 pt			,	30
	>3.0 m - 4.0 m (>	9 [°] 7" – 13'				≤1.0 m (≤ 3′ 3°						
	>1.5 m – 3.0 m (>	9 7 - 4 8	5") [20 pts]									1
COM	MENTS 4.3, 4.0	, 5.3 mete	rs		AVEF	RAGE BANKFUL	L WIDTH	(meters)		4.5	m	
				Thi	s informa	ation must also	be comple	eted				
RIPAR	AN ZONE AND FL		IN QUALITY				OTE: Rive	er Left (L) a	ind Right	(R) as lo	oking dov	vnstream☆
	RIPARIAN WIDT	H		_		<u>AIN QUALITY</u>						
L R	(Per Bank) Wide >10 m					lominant per Ba rest, Wetland	nk)		L R □□	Concons	ation Tillag	•
88	Moderate 5 – 10) m				Forest, Shrub or	Old Field				Industrial	C
	Narrow <5 m					l Park, New Fiel	d				sture, Row	
	None				enced Pa	isture			υ⊔	willing or	Construct	lion
	MENTS			_								
	/ REGIME (At Time Stream Flowing		•			Check <i>ONLY</i> on Moist Channel, I	solatéd Po		w (Interm	ittent)		
	Subsurface Flow	with Isolat	ed Pools (in	terstitial)		Dry Channel, No	Water (Ep	ohemeral)		-		
COM	MENTS											
	OSITY (Number of I	bends <u>pe</u> r				Check ONLY on						
\boxtimes	None 0.5	무	1.0 1.5		2.0 2.5] 3.0] >3					
_	AM GRADIENT ES	LI STIMATE	1.0	<u></u>	2.0	_						
	Flat (0.5 ft/100 ft)		Flat to Mod	lerate	□ M	oderate (2 ft/100	ft)] Mode	erate to S	evere		Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This information must also be compl	leted)
·	If Yes, Attach Completed QHEI Form
DOWNSTREAM DESIGNATED USE(S)	
☐ WWH Name ☐ CWH Name ☐ EWH Name	Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIREWATERSH	
USQS Quadrangle Name Francisco NRCS Soil Map Page	
County Gibson	Township/City Columbia
MISCELLANEOUS	
Base Flow Conditions? ☐ Yes ☐ No Date of Last Precipitation	8.16.05 Quantity 0.24"
Photograph Information	
Elevated Turbidity? ☐ Yes ☒ No Canopy (% open) _100%	
<u> </u>	r (Note lab sample no. or id and attach results)
, – –	
Field Measures - Temp (°C) Dissolved Oxygen (mg/l)	
Is the sampling reach representative of the stream?	t, please explain
Additional comments/description of pollution impacts Row crops adjacent	to both sides of the stream
BIOTIC EVALUATION	
Fish Observed? Yes No Voucher? Yes No Sala	ctions optional. NOTE: all voucher samples must be labeled with the site ID from the Primary Headwater Habitat Assessment Manual) amanders Observed?
Comments Regarding Biology	
DRAWINGS AND NARRATIVE DESCRIPTION Of Include important landmarks and other features of Interest for site	
grass leg	
Cattails & wetland	Veg

r. c. ag



I-69 Wetland Quality Assessment Profile

Date Report Generated:
Wetland site:
Data reference #
Date of site visit:
Total wetland area:

Wetland Impact #1 11/28/2006 Section 1 **W01** 08/09/05 0.055 acres

Polygon Information	
	0
ze (acres)	0.055
Туре	FF
Red Flag (Special) Indicators	
Special Hydrologic Conditions	z
Special Community Type	z
Rare-Threatened-Endangered Species	Z
Animal Habitat Measures	
Wetland size and connectivity	
Surrounding land use	2
Standing water	-
Dead woody material	ო
Zonation and interspersion	
Stratification	ო
Tree canopy	m
Mature trees	
Animal Habitat Measure Score (min = 8, max = 24,	15
Animal Habitat Measure Rating	fair
Botanical Measures (all except exotics dependent upon community type)	
Number of dominant plant taxa observed	
Conservatism rating	-
Total hydrophytic taxa observed	2
Number of indicator taxa	
Exotic species rating	က
Botanical Measure Score (min = 5, max = 15,	ω
Botanical Measure Rating	poor
Hydrology Measures	
Water quality protection (= no. of yes answers)	m
Flood and storm water storage (= no. of yes answers)	
Site/Hydrology Score (min = 11, max = 33)	6)
Site/Hydrology Rating	fair

In-WRAP Summary Sheet

Indiana Wetland Routine A	Assessment Prot	ocol f	ricet Bata Referen	ice# 103-6	57-30 / 60 TERG May 2000
Tier 1: Assessment O	verview				TERG May 2000
Wetland site name:	SECY-WOL				
Ownership (if known):0	<u>a</u>				
USGS Topographic Quadrang	gle(s): _Fl	cold			
USGS Watershed map 14-Dig	git HUC: 0616				<u></u>
Identify each NWI Polygon wil	hin the Welland S	ite (Polya	20050	`	
NWI Polygon ID Number	1		on specific data	<i>-</i>	
Cowardin Classification	Mes to a				
Polygon Size (hectares)	PED-1-C-1				
1. Syguit One (nectares)	0.02023				
NWI Polygon ID Number	T		 		
Cowardin Classification					
Polygon Size (hectares)					
1.2 Site Visit:				—.J	
Team members: ENCA C	hacterica.	d da	المالية المالية	10	
Agency: JENeus					· · · · · · · · · · · · · · · · · · ·
					
Date assessed: 8-4-04	5Time	assessed	表12 40	en?	
Weather conditions: Not \	unid, mida	nd air	คน		
Note any unusual weather ever system (e.g. recent heavy rains	nts that may have	influence.	Manager and the second	**************************************	
Move				. , .	
1.3 Wetland Size:					
Size of site under assessment:	O-DEDZ NE	ctarec =	0.05		
Size of total wetland complex (
1.4 Site Setting:		wat beda	, isj		
Degree of isolation from other	wetlands or wetlan	id complex	es:		
The site is connected to The site is only connected to The site is only connected. Other wetlands are nead to the wetlands are nead to the wetlands are nead to the wetlands.	pstream and down ted upstream with ted downstream w	nstream w other wet	ith other wetlan ands	ds	
General assessment of adjacer welland site (indicate the % about	tlanduce / fand.	cover in the	area within 50	meters of th	e perimeter of the
Native Vegetation - woo Native Vegetation - old I Native Vegetation - woo Native Vegetation - old I Native	dland field / scrub	26% Roa Indu Res	d / highway / re istrial idential - single nmercial or mul	family:	eli

6.6

(coo lable on nego engl	Data Reference # 030230 lnWRAP, TERG May 2000
(see table on page one)	1-wol
Tier 2 Individual Polygon: Polygon present in the wetland)	reliminary Assessment (to be completed on-site for each NWI
2.1 Wetland Geomorphic Setting	and Surface Water Flow (check one);
Depressional Slog Riverine (within the river/stre	pe Floodplain Lacustrine earn banks)
2.2 Presence of Standing Water:	
Is standing water nearmally present in If standing water is present, is standing water normally present in	is the water greater than 2 meters in donth?
2.3 Apparent Hydroperiod (check	one):
Permanently Flooded Seasonally Flooded	Artificially Flooded
Saturated (surface water sel	Idom present) Artificially Drained
2.4 Soil Type:	
Organic (i.e. peat, etc.)	Mineral Both Mineral and Organic Present
	this NWI polygon (see Key to Wetland Communities of Indiana):
floodplain Gorest	
2.6 Disturbances of Hydrology (ct	heck all that apply):
2.6 Disturbances of Hydrology (cf	heck all that apply):
2.6 Disturbances of Hydrology (cf	Culvert Other Human Disturbances to the
2.6 Disturbances of Hydrology (ch	Culvert Other Human Disturbances to the
2.6 Disturbances of Hydrology (cf. X Ditching Tiles Dams Road or Railroad Embankment	Culvert Other Human Disturbances to the Hydrology (explain):
2.6 Disturbances of Hydrology (check	Culvert Other Human Disturbances to the Hydrology (explain): ent [Score as: S = Scattered, F = Frequent, or C = Common): None
2.6 Disturbances of Hydrology (check	Culvert Other Human Disturbances to the Hydrology (explain): ent [Score as: S = Scattered, F = Frequent, or C = Common): None Glossy Buckthorn Reed canary grass
2.6 Disturbances of Hydrology (check	Culvert Other Human Disturbances to the Hydrology (explain): (Score as: S = Scattered, F = Frequent, or C = Common): None Glossy Buckthorn Reed canary grass Other (list):
2.6 Disturbances of Hydrology (check	Culvert Other Human Disturbances to the Hydrology (explain): ent [Score as: S = Scattered, F = Frequent, or C = Common): None Glossy Buckthorn Reed canary grass
2.6 Disturbances of Hydrology (check	Culvert Other Human Disturbances to the Hydrology (explain): [Score as: S = Scattered, F = Frequent, or C = Common): None Glossy Buckthorn Reed canary grass Other (list): Ic Conditions (i.e. seeps, wet slopes, floating mat):
2.6 Disturbances of Hydrology (check	Culvert Other Human Disturbances to the Hydrology (explain): (Score as: S = Scattered, F = Frequent, or C = Common): None Glossy Buckthorn Reed canary grass Other (list): Ic Conditions (i.e. seeps, wet slopes, floating mat):
2.6 Disturbances of Hydrology (check	Culvert Other Human Disturbances to the Hydrology (explain): (Score as: S = Scattered, F = Frequent, or C = Common): None Glossy Buckthorn Reed canary grass Other (list): Ic Conditions (i.e. seeps, wet slopes, floating mat):
2.6 Disturbances of Hydrology (cf	Culvert Other Human Disturbances to the Hydrology (explain): (Score as: S = Scattered, F = Frequent, or C = Common): None Glossy Buckthorn Reed canary grass Other (list): Ic Conditions (i.e. seeps, wet slopes, floating mat): Wet Sand / Muck Flats or Marl Seeps
2.6 Disturbances of Hydrology (cf X Ditching Tiles Dams X Road or Railroad Embankme 2.7 Presence of Invasive Exotics (Garlic Mustard Phragmities Purple Loosestrife 2.8 Presence of Special Hydrologi 2.9 Presence of Special Communication Bog Fen None observed or known to be	Culvert Other Human Disturbances to the Hydrology (explain): ent (Score as: S = Scattered, F = Frequent, or C = Common): None Glossy Buckthorn Reed canary grass Other (list): Ic Conditions (i.e. seeps, wet slopes, floating mat): Wet Sand / Muck Flats or Marl Seeps or Indiana Rare, Threatened or Endangered Species:
2.6 Disturbances of Hydrology (cf X Ditching Tiles Dams X Road or Railroad Embankme 2.7 Presence of Invasive Exotics (Garlic Mustard Phragmities Purple Loosestrife 2.8 Presence of Special Hydrologi 2.9 Presence of Special Communication Bog Fen 2.10 Presence of Known Federal of RTES Present (list):	Culvert Other Human Disturbances to the Hydrology (explain): ent (Score as: S = Scattered, F = Frequent, or C = Common): None Glossy Buckthorn Reed canary grass Other (list): Ic Conditions (i.e. seeps, wet slopes, floating mat): Wet Sand / Muck Flats or Marl Seeps or Indiana Rare, Threatened or Endangered Species:

	·
NWI Polygon #(see table on page one)	Data Reference # <u>020730/60</u> InWRAP, TE
Tier 2 Individual Polygon: P polygon present in the wetland)	reliminary Assessment (to be completed on-site for
2.1 Wetland Geomorphic Setting	and Surface Water Flow (check one):
Depressional Slo Slo Riverine (within the river/strue	pe Floodplain Lacustrine earn banks)
2.2 Presence of Standing Water:	
Is standing water normally present in If standing water is present, is standing water normally present in	is the water greater than 2 meters in doub?
2.3 Apparent Hydroperiod (check	
Permanently Flooded Seasonally Flooded	Artificially Flooded
Saturated (surface water se	ldom present) Artificially Drained
2.4 Soil Type:	
Organic (i.e. peat, etc.)	Mineral Both Mineral and Organic Present
2.6 Disturbances of Hydrology (cl	
Ditching Tiles	Culvert Other Human Disturbances to
Dams Road or Railroad Embankmi	Hydrology (eyplain):
2.7 Presence of Invasive Exotics	(Score as: S = Scattered, F = Frequent, or C = Common
Garlic Mustard	Glossy Buckthorn
Phragmities Purple Loosestrife	Reed canary grass
	Other (list): ic Conditions (i.e. seeps, wet slopes, floating mat):
2.9 Presence of Special Communi	· · · · · · · · · · · · · · · · · · ·
±	
	Wet Sand / Muck Flats or Mari Seeps
	or Indiana Rare, Threatened or Endangered Species:
None observed or known to I RTES Present (list):	be present
	criptor (see: Wetland Quality Descriptions and check of
Gödd Maddur	•

.

NWI	Polygon # Data Reference #D30730 Dimwrap, TERG Ma	ay 2000
	r 3a Individual Polygon: Rapid Hydrology Indicators	
3a.1	Notable Features that influence water quality and hydrology:	
Estic	mated herbaceous plant cover (percentage) in the polygon 100.75 77.50 50.05	C <25
Estir	mated woody plant foliar coverage in the polygon X 100-75 75-50 50-25	<25
Amo	ount of dead woody material on the soil surface:nilscattered free	quent
3a.2	Water Quality Protection Questions:	
1.	N Does the wetland have a significant amount of vegetative (specifically herbaceous and woody plant) density to potentially uptake dissolved nutrients?	i
2.	N Managed water (e.g. municipal or road stormwater drainage, agricultural drainage outle industrial or municipal wastewater) is not discharged into the wetland polygon?	et,
3.	If wetland in question is a depressional wetland answer 3a, if not, answer 3b 3a. Does the wetland have a shape or flow that allows for the settling out of suspended materials before the water reaches the center of the wetland? 3b. Y N is the position of the wetland in the landscape such that run-off is held or filtered be entering a surface body of water down gradient?	
4.	Y Does the wetland lack steep slopes, large impervious areas, moderate slopes with rov cropping, or areas with severe overgrazing within 100 meters of its border?	N
5.	Y Are there recreational lakes, fishable or navigable watercourses, or water supply source down gradient in the local watershed?	ces
6.	Is a vegetative buffer area or another wetland polygon (areas where overland flow coufiltered) located upland and adjacent to the wetland polygon? If yes, describe buffer area wid and stope.	uld be dih
	width of buffer area (in meters) 700 approximate slope (percent) 23%	
3a.3	Flood and Stormwater Storage / Attenuation Questions:	
1.	If wetland in question is a depressional wetland answer 1a, if not, answer 1b 1a. N Around the wetland is there a buffer strip of natural vegetation (forested, old field, so that will slow overland flow into the wetland? 1b. Y N Is there a significant amount of microtopography or vegetative density within the wetland?	
2	Y Does the wetland lack man-made structures that would speed the flow of water from the wetland (tiles, culverts, ditches)?	he
3.	Y Is the flood potential high in the local watershed in which the wetland is located (history flood damages)?	ø of
4.	Y (1) Is the wetland located in a watershed where the majority of the upland soils are clayey impermeable, or is bedrock within two feet of the top of the soil profile?	and
5.	Y to list the wetland located in a local watershed which has highly modified runoff conditions to existing development?	due

NWI Polygon #	Data Nelelell	ce# <u>03030/00</u> inwi	Da , ILITO May
Tier 3b Individual Polygon: I	Rapid Vegetation De		
3b.1 Zonation and Interspersion:	apia rogulation b	o o i i più o i i	
4		v . 1	
 How many vegetation zones are 	evident in this wetland p	olygon?	· · · · · · · · · · · · · · · · · · ·
1b. If only one vegetation zone is	s evident, which best des	cribes the site?	
Polygon composed o	f a mosaic of small veget	ation patches, hummocks,	or tussocks;
heterogeneous te	extures across the polygon).	Annala de la compansión d
polygon.	i a single vegetation type	with more or less uniform	texture across
, , ,			
If more than one vegetation zone represents the distribution of these z	is present in the polygon,	which interspersion diagra	m most close
Type One Interspersion	.01100	Type Two Interspers	ion
			\
$((\bigcirc))$		(55	}
			/
0			
ALA Nametra de Manda Antonio de Contra de Cont		Observation P	
3b.2 Dominant Plant Species: Ve	getation zone A		
3b.2 Dominant Plant Species: Ve	getation zone A	Roll / photo number(s) (Note: V-mark location o	
		Roll / photo number(s)	
What % of the polygon does this ve	getative zone occupy?	Roll / photo number(s) (Note: V-mark location o	n the NWI poly
What % of the polygon does this ve ☐ 10 - 25% ☐ 25 - 50%	getative zone occupy? [] 50 - 75%	Roll / photo number(s) (Note: V-mark location o	n the NWI poly
What % of the polygon does this ve	getative zone occupy? [] 50 - 75%	Roll / photo number(s) (Note: V-mark location o	n the NWI poly
What % of the polygon does this veg ☐ 10 - 25% ☐ 25 - 50% Is there notable layering/stratification	getative zone occupy? 1350 - 75% in this vegetation zone?	Roll / photo number(s) (Note: V-mark location o	n the NVVI poly
What % of the polygon does this ve ☐ 10 - 25% ☐ 25 - 50%	getative zone occupy? [] 50 - 75% in this vegetation zone? covering more than 10.9	Roll / photo number(s) (Note: V-mark location o 175 - 90% 465 6 of the area) listed in orde	n the NVVI poly
What % of the polygon does this ver 10 - 25%	getative zone occupy? [] 50 - 75% In this vegetation zone? covering more than 10 % ecies that forms extensive	Roll / photo number(s) (Note: V-mark location o 175 - 90% 46 of the area) listed in order monocultural patches).	n the NVVI poly
What % of the polygon does this ver 10 - 25%	getative zone occupy? [] 50 - 75% In this vegetation zone? covering more than 10 % ecies that forms extensive	Roll / photo number(s) (Note: V-mark location o 175 - 90% 46 of the area) listed in orde a monocultural patches).	r of relative
What % of the polygon does this ver 10 - 25%	getative zone occupy? [] 50 - 75% In this vegetation zone? covering more than 10 % ecies that forms extensive [] e	Roll / photo number(s) (Note: V-mark location o 1775 - 90% 4 of the area) listed in order monocultural patches).	r of relative
What % of the polygon does this ver 10 - 25%	getative zone occupy? [] 50 - 75% In this vegetation zone? covering more than 10 % ecles that forms extensive [] [] []	Roll / photo number(s) (Note: V-mark location o 175 - 90% 46 of the area) listed in order monocultural patches).	r of relative
What % of the polygon does this verification of the polygon does th	getative zone occupy? [] 50 - 75% In this vegetation zone? covering more than 10 % ecies that forms extensive [] e	Roll / photo number(s) (Note: V-mark location o 1775 - 90% 4 of the area) listed in order monocultural patches).	r of relative
What % of the polygon does this ver 10 - 25%	getative zone occupy? [] 50 - 75% In this vegetation zone? I covering more than 10 % ecies that forms extensive [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [Roll / photo number(s) (Note: V-mark location o 1775 - 90% 46 of the area) listed in orde a monocultural patches).	r of relative
What % of the polygon does this ver 10 - 25%	getative zone occupy? [] 50 - 75% In this vegetation zone? I covering more than 10 % ecies that forms extensive [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [Roll / photo number(s) (Note: V-mark location o 1775 - 90% 46 of the area) listed in orde a monocultural patches).	r of relative
What % of the polygon does this ver 10 - 25%	getative zone occupy? [] 50 - 75% In this vegetation zone? covering more than 10 % ecles that forms extensive [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [Roll / photo number(s) (Note: V-mark location o 1775 - 90% 46 of the area) listed in orde a monocultural patches).	r of relative
What % of the polygon does this ver 10 - 25%	getative zone occupy? [] 50 - 75% In this vegetation zone? covering more than 10 % ecies that forms extensive e f g h rder of relative abundance	Roll / photo number(s) (Note: V-mark location o 1775 - 90% 46 of the area) listed in order monocultural patches).	r of relative
What % of the polygon does this ver 10 - 25%	getative zone occupy? [] 50 - 75% In this vegetation zone? It covering more than 10 9 ecies that forms extensive g	Roll / photo number(s) (Note: V-mark location o 175 - 90% 46 of the area) listed in order monocultural patches).	r of relative
What % of the polygon does this ver 10 - 25%	getative zone occupy? [] 50 - 75% In this vegetation zone? It covering more than 10 9 ecies that forms extensive g	Roll / photo number(s) (Note: V-mark location o 175 - 90% 46 of the area) listed in order monocultural patches).	r of relative
What % of the polygon does this ver 10 - 25%	getative zone occupy? [] 50 - 75% In this vegetation zone? covering more than 10 % ecies that forms extensive [] [] [] [] [] [] therefore of relative abundance [] [] [] [] [] [] to covering more than 10 % ecies that forms extensive [] [] [] [] [] [] [] [] [] to covering more than 10 % ecies that forms extensive [] [] [] [] [] [] [] [] [] [] to covering more than 10 % ecies that forms extensive [] [] [] [] [] [] [] [] [] [] [] [] to covering more than 10 % ecies that forms extensive [] [] [] [] [] [] [] [] [] [] [] [] [] [Roll / photo number(s) (Note: V-mark location o 175 - 90% 46 of the area) listed in order monocultural patches).	r of relative
What % of the polygon does this ver 10 - 25%	getative zone occupy? 50 - 75% 50 - 75% in this vegetation zone? covering more than 10 % ecles that forms extensive f	Roll / photo number(s) (Note: V-mark location o 175 - 90% 46 of the area) listed in order monocultural patches).	n the NVVI poly C T Of relative



NWI Polygon #		Data Reference	# <u>050230/00</u> inwraf	P, TERG May 2000
3b:2 Dominant Plant	Species: Vegetation zo	ne R	Observation Poir	nt #2
	opolion vegetation 20	D	Roll / photo number(s)	11. 172
			(Note: V-mark location on the	he NWI polygon)
What % of the polygon	does this vegetative zon	e occupy?	•	
10 - 25%	1) 25 - 50%	□ 50 <i>-</i> 75%	□ 75 - 90%	□ >90 %
ls there notable layering	g/stratification in this veg	etation zone?	·	
	Species (i.e. covering man an any species that for		of the area) listed in order o monocultural patches).	f relative
a		e		
b		f	· · · · · · · · · · · · · · · · · · ·	
.		. . .		
Dominant Shrub Speci	ies listed in order of relat	ve abundance.		
a		c		
b				
a	OP 01	VI с		OP OM
b	OP 01	M d		DP DM
Tree and shrub canopy	u.			
	e, seldom touching	□often toucl	ning Omore or less	s closed
3b.2 Dominant Plant	Species: Vegetation zo	one C	Observation Poi	
			Roll / photo number(s) (Note: V-mark location on t	the NWI polygon)
What % of the polygon	does this vegetative zor	ne occupy?		
□ 10 - 25%	☐ 25 - 50%	□ 50 - 75%	□ 75 - 90%	G >\$0%
Is there notable layering	ng/stratification in this veg	getation zone?_		
	s Species (i.e. covering r th an *any species that f		of the area) listed in order of monocultural patches).	of relative
a				
		e		
b				
		f		

en la seconda de la companya de la c

NWI Polygon #			30730/65 Inwa	
Dominant Shrub Species listed in order of re	elative at	oundance.		
a		c		:
b	_	d	- 	
Dominant Tree Species. Indicate size categories	jories of	each tree speci	es: P=pole (3-12"dbh)	, M=mature (>12
aDP	ПM			
bDP	ПM	d		OP (
Tree and shrub canopy: ☐ nil ☐ separate, seldom touching	O	often touching	Omore or le	ss closed
3b.2 Dominant Plant Species: Vegetation	n zone D	R	Observation P oll / photo number(s) ote: V-mark location of	
What % of the polygon does this vegetative ☐ 10 - 25% ☐ 25 - 50%			□ 75 - 90 %	□ >9
is there notable layering/stratification in this	vegetati	on zone?		
abundance. (Mark with an * any species that a		e		
C				
d		h		
Dominant Shrub Species listed in order of ab	relative a	abundance. cd_		
Dominant Tree Species. Indicate size cate	Mo	f each tree spe		DP
b0	≥ OM	d		UP

Sec1-w01				management of the second of th
Common Name	Botanical Name	Indicator	FQA	notes
oox-elder	Acer negundo	FACW-	1	
ed maple	Acer rubrum	FAĆ	5	dominant
alse-nettle	Boehmeria cylindrica	OBL	3	
rumpet creeper	Campsis radican	FAC	1	
swamp oval sedge	Carex muskingumensis	OBL	2	The state of the s
straight-styled bracted sedge	Carex radiata	UPL	7	upland
sedge	Carex sp.	FACW	7	
fox sedge	Carex vulpinoidea	OBL	7	
northern catalpa	Catalpa speciosa	FACU	0	upland
sugarberry	Celtis laevigata	FACW	7	
stout wood-reedgrass	Cinna arundinacea	FACW	4	1
common boneset	Eupatorium perfoliatum	FACW+	4	
late boneset	Eupatorium serotinum	FAC+	0	
green ash	Frexinus pennsylvanica	FACW	1	
white avens	Geum canadense	FAC	1	***************************************
fowl manna grass	Glyceria striata	OBL	4	
whitegrass	Leersia virginica	OBL	4	dominan
red mulberry	Morus rubra	FAC-	4	upland
smartweed (formerly polygonom punctatum)	Persicaria punctata	OBL	3	
clearweed	Pilea pumila	FACW	2	
sycamore	Platanus occidentalis	FACW	3	
quercus (black jack oak)	Quercus marilandica	UPL	7	upland
green bulrush	Scirpus atrovirens	OBL.	4	The state of the s
american elm	Ulmus americana	FACW-	3	dominan
poison ivy	Toxicodendron radicans	FAC+	1	dominan
		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	20	W. \$7.75 AMAN 70 /
total hydrophytic taxa observed			3.25	
average of FQA (dominant wetland species only)	The second secon		3.25	
number of indicator taxa	The state of the s			
### ##################################	populari de contrator de la contrator de la contrator de contrator de contrator de contrator de contrator de c	A CONTRACTOR OF MARKET AND ADDRESS OF THE PARTY OF THE PA		

I-69 Wetland Quality Assessment Profile

Date Report Generated:
Wetland site:
Data reference #
Date of site visit:
Total wetland area:

Wetland Impact #2 2/17/2006 Section 1 **W05** 08/30/05 0.01 acres

Polygon Information		
Polygon ID	0	
Polygon Size (acres)	0.010	
Wetland Community Type	WM	
Red Flag (Special) Indicators		
Special Hydrologic Conditions	z	
Special Community Type	z	
Rare-Threatened-Endangered Species	z	
Animal Habitat Measures		
Wetland size and connectivity	2	
Surrounding land use	က	
Standing water	_	
Dead woody material	τ-	
Zonation and interspersion	-	
Stratification	τ-	
Tree canopy	-	
Mature trees	1	
Animal Habitat Measure Score (min = 8, max = 24,	Ξ	
Animal Habitat Measure Rating	poor	
Botanical Measures (all except exotics dependent upon community type)	(əc	
Number of dominant plant taxa observed	2	
Conservatism rating	, -	
Total hydrophytic taxa observed	-	
Number of indicator taxa	-	
Exotic species rating	က	
Botanical Measure Score (min = 5, max = 15)	∞	
Botanical Measure Rating	poor	
Hydrology Measures		
Water quality protection (= no. of yes answers)	ო	
Flood and storm water storage (= no. of yes answers)	2	
Site/Hydrology Score (min = 11, max = 33)	77	
Site/Hydrology Rating	fair	

In-WRAP Summary Sheet

Date Report Generated: 6-30-05
Wetland site name: _ う(に) - いのち Data Reference #
Date of Site Visit: 8 - 35 - 05
NWI polygons in Site (quadrangle and NWI id. numbers):
TIER 1 SUMMARY:
a. Total welland area (hectares):O_O_ ocres
b. Wetland size and connectivity - contribution to animal habitat:
Valuable More Favorable Favorable Neutral
c. Surrounding land use - numerical rank (max. = 1): 0.75
d. Value surrounding area adds to animal habitat: Valuable Favorable Low
TIER 2 SUMMARY NWI Polygon Id.
a. Indiana Welland community type: Wel mlodow
b. Standing water - contribution to animal habitat: Valuable Favorable (Neutral)
c. Disturbances to sile: 100 d
d. Exotic species rating: Good Medium Poor
e. Special Hydrologic Conditions Observed: VIONA
f. Special Community Type:
g. Rare-Threatened-Endangered Species: NorVe
h. Polygon Quality Descriptor: Good Medium Poor
TIER 3A SUMMARY
a. Dead woody material as indicator of animal habitat: Valuable Favorable (Neutral)
b. Water quality protection - numerical rank (s max.): 3 Rating: Good (Medium) Poor
& c. Flood and storm water storage - numerical rank (5 max.): 2 Rating: Good Medium Poor
TIER 3B SUMMARY
a. Zonation and interspersion as indicator of animal habitat: Valuable Favorable Neutral
b. Stratification as indicator of animal habitat: Valuable Neutral
A c. Number of dominant plant taxa observed: 5 Rating: Good Medium Poor
d. Average coefficient of conservatism; 1-6 Rating: Good Medium Poor
e. Tree canopy as indicator of animal habitat: Valuable Neutral
f. Mature trees as indicator of animal habitat: Valuable Favorable Neutral
Table 1 and
h. Number of Indicator taxa: V Rating: Good Medium Poor

	Indiana Wetland Routine Ass	essment Protocol	Data Reference #	
	Tier 1: Assessment Overv 1.1 Site Identification:	iew		TERG May 2000
,	Wetland site name: Sec1	- w 05		
i	Ownership (if known):	<u></u>		
	USGS Topographic Quadrangle(s			
	USGS Watershed map 14-Digit Hi			
	Identify each NWI Polygon within	the Wetland Site (P	olygon specific data)	
*	NWI Polygon ID Number			
	Cowerdin Classification Polygon Size (hectares)	0.00HOH69		
i	1 caygon oizo (nociares)	O DOTO-16-11	<u></u>	
	NWI Polygon ID Number			
	Cowardin Clessification Polygon Size (hectares)			
	1,2 Site Visit:			
			en en la	
	Team members: <u>Frica Cl</u>	_,		
ine.	Agency: JF New			
	Date assessed: <u>8 - 30- 05</u>	Time asse	essed:	
	Weather conditions: Not hu	mid, mid 9	O's Sunny	·
	Note any unusual weather events (e.g. recent heavy rains, an unusi	that may have influ	enced the current conditions i	within this wetland system
	none	<u> </u>		
	1.3 Wetland Size:			
	Size of site under assessment:	0.004046	9 hectares = 0.01	acres
	Size of total wetland complex (all	continuous wetland	polygons):	
	1.4 Site Setting: Degree of isolation from other we		, —	
	The site is connected ups The site is only connected The site is only connected Other wetlands are nearb The wetland site is isolated	d upstream with oth d downstream with by (within 0.25 mile)	er wetlands Other wetlands	
	General assessment of adjacent wetland site (indicate the % abun	dence of each type	er in the area within 50 meters :	of the perimeter of the
	75 % Native Vegetation - woodl Native Vegetation - old fie Agricultural - tilled	and C ld / scrub	35% Road / highway / railroa Industrial Residential - single fami	ily
	Agricultural - pasture Recreation - green space	, mowed	Commercial or multifam	ily residential

NWI Polygon # (see table on page one)	Data Reference # 050730 INWRAP, TERG May 2000
see while on page one)	1-was
ier 2 Individual Polygon: Prelimolygon present in the wetland)	ninary Assessment (to be completed on-site for each NWI
1 Wetland Geomorphic Setting and S	Surface Water Flow (check one):
Depressional Slope Riverine (within the river/stream b	FloodplainLacustrine
2.2 Presence of Standing Water:	
Is standing water normally present in the p • If standing water is present, is the is standing water normally present in an a	e water greater than 2 meters in depth?
2.3 Apparent Hydroperiod (check one)	¢
Permanently Flooded Seasonally Flooded	Artificially Flooded
Saturated (surface water seldom	present)Artificially Drained
2.4 Soll Type:	
Organic (i.e. peat, etc.)	Mineral Both Mineral and Organic Present
2.6 Disturbances of Hydrology (check	Culvert
Tiles Dams Road or Railroad Embankment	Other Human Disturbances to the Hydrology (oxplain):
2.7 Presence of Invasive Exolics (Sce	re as: S = Scattered, F = Frequent, or C = Common):
Garlic Mustard	Glossy Buckthorn
Phragmities Purple Loosestrife	Reed canary grass _x_ Other (list):
2.8 Presence of Special Hydrologic Co	anditions (i.e. seeps, wet slopes, floating mat):
2.9 Presence of Special Community Ty	ypes: vy/a
BogFen	Wet Sand / Muck Flats or Mari Seeps
2.10 Presence of Known Federal or In	diana Rare, Threatened or Endangered Species: $ \gamma / \alpha $
None observed or known to be p	resent
2.11 Wetland Polygon Quality Descrip	otor (see: Wetland Quality Descriptions and check one):
	Poor

NV	Wi Polygon #	Data Reference # <u>030</u>	DT30 InWRAP, TERG May 2000
Ti	ler 3a Individual Polygon: Rapid	Hydrology Indicators	1-w05
За	a.1 Notable Features that inflüence wat	er quality and hydrology:	
Es	stimated herbaceous plant cover (percenta	ige) in the polygon100-	7575-50 50-25 <25
Es	stimated woody plant foliar coverage in the	polygon 100-	75 <u>75-50 × 50-25 </u> <25
Ąr	stimated woody plant foliar coverage in the mount of dead woody material on the soil:	surface: X nil	scatteredfrequent
3a	a.2 Water Quality Protection Questions	!	
1.	Plant) density to potentially uptake	nificant amount of vegetative dissolved nutrients?	(specifically herbaceous and woody
2.	Y Managed water (e.g. municipa industrial or municipal wastewater)	or road stormwater drainag is not discharged into the w	e, agricultural drainage outlet, stland polygon?
3.		shape or flow that allows for the welland? Iland in the landscape such t	he settling out of suspended materials
4.	. YN Does the wetland lack steep cropping, or areas with severe ove	slopes, large impervious are rgrazing within 100 meters of	eas, moderate slopes with row its border?
5.	. Y N Are there recreational lakes, gradient in the local watershed?	fishable or navigable watero	ourses, or water supply sources down
6.		nt to the wetland polygon? If	yes, describe buffer area width and
3:	a.3 Flood and Stormwater Storage / At	enuation Questions:	
1.	1a. Y(N Around the wetland is the will slow overland flow into the wel	ere a buffer strip of natural ve land? Bunt of microtopography or v	ot, answer 1b getation (forested, old field, scrub) that egetative density within the wetland to
2	2. YN Does the wetland lack man- wetland (tiles, culverts, ditches)?	made structures that would s	peed the flow of water from the
M3	Y N is the flood potential high in damages)?	the local watershed in which	the wetland is located (history of flood
4	Y N Is the wetland located in a w impermeable, or is bedrock within	ratershed where the majority two feet of the top of the soil	of the upland soils are clayey and profile?
5	6. Y N Is the wetland located in a lo existing development?	cal watershed which has high	nly modified runoff conditions due to

NWI Polygon #	Data	Reference # _()	30730 INWRAP, TEF	RG May 2000
Tier 3b Individual P 3b.1 Zonation and Inte	olygon: Rapid Veget	ation Descrip	tion	
1. How many vegetatio	n zones are evident in this	welland polygon?	1	
1b. If only one veget	ation zone is evident, which	best describes t	he site?	
heter	composed of a mosaic of si ogeneous textures across composed of a single veget yon.	he polygon.		
2. If more than one vege represents the distribution	tation zone is present in the	polygon, which i	nterspersion diagram mos	t closely
Type One Inter		Type Tw	o Interspersion	
3b.2 Dominant Plant S	pecies: Vegetation zone		Observation Poin	t #1
	•		Roll / photo number(s) (Note: V-mark location on the	NWI polygon)
What % of the polygon to 10 - 25%	does this vegetalive zone o 25 - 50%	1		
10 - 25%		cupy? 50 - 75%	(Note: V-mark location on the	NWI polygon)
10 - 25%. Is there notable layering Dominant Herbaccous:	25 - 50% /stratification in this vegetal Species (i.e. covering more	cupy? 50 - 75% lon zone?	(Note: V-mark location on the 75 - 90%	×>90%
10 - 25%. Is there notable layering Dominant Herbaceous: (Mark with an * any spe	25 - 50% /stratification in this vegetal Species (i.e. covering more cies that forms extensive m	ccupy? 50 - 75% lon zone?	(Note: V-mark location on the 75 - 90% O area) listed in order of reles).	×90%
10 - 25% Is there notable layering Dominant Herbaceous (Mark with an * any spe	25 - 50% /stratification in this vegetal Species (i.e. covering more cies that forms extensive m	ccupy? 50 - 75% lon zone?	(Note: V-mark location on the 75 - 90% D area) listed in order of reles). Und solkenush	X>90% ative abundance
10-25%. Is there notable layering Dominant Herbaceous: (Mark with an * any spe e Slender rus) b yellow sped for annual rage	25 - 50% Istratification in this vegetal Species (i.e. covering more cies that forms extensive management) The properties of the period of the properties	ccupy? 50 - 75% ion zone?	(Note: V-mark location on the 75 - 90% O area) listed in order of reles).	×>90%
10-25% Is there notable layering Dominant Horbaceous: (Mark with an * any spe • Slender rus) • Yellow seed f	25 - 50% Istratification in this vegetal Species (i.e. covering more cies that forms extensive management) The properties of the period of the properties	ccupy? 50 - 75% ion zone?	(Note: V-mark location on the 75 - 90% O area) listed in order of reles). Un't soikenush	×>90%
10-25% Is there notable layering Dominant Herbaceous: (Mark with an any spe - Slender rus) - Lellow sped for annual ray - diffensylvania	25 - 50% Istratification in this vegetal Species (i.e. covering more cies that forms extensive management) The properties of the period of the properties	ccupy? 50 - 75% ion zone?	(Note: V-mark location on the 75 - 90% O area) listed in order of reles). Un't soikenush	×>90%
10-25% Is there notable layering Dominant Herbaceous: (Mark with an any spe - Slender rust b yellow sped for annual ray d fennsylvania	25 - 50% /stratification in this vegetal Species (i.e. covering more cies that forms extensive management) also pimpernel med Smartured	ccupy? 50 - 75% ion zone? than 10 % of the onocultural patch f g h abundance.	(Note: V-mark location on the 75 - 90% O area) listed in order of reles). Un't soikenush	X>90%
Is there notable layering Dominant Herbaceous: (Mark with an * any spe - Slender rus) - Lellow sped for annual ragion - Annual ragion - Mensulvania Dominant Shrub Specie	25 - 50% /stratification in this vegetal Species (i.e. covering more cies that forms extensive management) also pimpernel med Smartured	ccupy? 50 - 75% ion zone? than 10 % of the onocultural patch f g h abundance.	(Note: V-mark location on the 75 - 90% D area) listed in order of relies). UNY SOIKENASM	X>90%
Is there notable layering Dominant Herbaceous: (Mark with an any spe e Slender rust b yellow sped for annual rage d fennsulvania Dominant Shrub Specie a b	25 - 50% /stratification in this vegetal Species (i.e. covering more cies that forms extensive management) also properties med () smartweed () smartweed () ses listed in order of relative	ccupy? 50 - 75% Ion zone?	(Note: V-mark location on the 75 - 90% D area) listed in order of reles). UNY SOIKENUSM	×>90%
Is there notable layering Dominant Horbaceous: (Mark with an * any spe o Slender rus) b yellow seed fo annual rago d fennsulvania Dominant Shrub Specie a b	25 - 50% /stratification in this vegetal Species (i.e. covering more cies that forms extensive means that forms extensive means that forms extensive means are supported to the second	ccupy? 50 - 75% Ion zone?	(Note: V-mark location on the 75 - 90% D area) listed in order of reles). UNY SOIKENUSM	×>90%

•

NWI Polygon #	Dat	a Reference # _	hWRAP, TERG May	2000	i
Dominant Shrub Species listed in order of re	elative	abundance.			
a	_	C			_
b					_
Dominant Tree Species. Indicate size categ	ories	of each tree spec	ies: P=pole (3-12"dbh), M=mature (>	127)	
а Р	M	c		P	M
bP	M	d	- March Martin	P	M
Tree and shrub canopy:					
nil separate, seldom touching		often touching	more or less closed		
3b.2 Dominant Plant Species: Vegetation	i zone	Ð	Observation Point #4 Roll / photo number(s) (Note: V-mark location on the NWI p	volvos	\
18/limet O/ of the materials and the constant			frience it mont receipes on mic sitat?	, <u>, 19</u>	wiij
What % of the polygon does this vegetative 10 - 25% 25 - 50%	zone	оссиру <i>!</i> 50 - 75%	75 - 90%		>90%
Is there notable layering/stratification in this		-N			
ab					-
d					
Dominant Shrub Species listed in order of r	relativ	e abundance.			
a					
b					_
		-			_
Dominant Tree Species. Indicate size cate	gories	of each tree spe	cies: P=pole (3-12'dbh), M=mature (>	12")	
а Р	M	c		P	М
<u> b</u> P	M	d		P	М
Tree and shrub canopy: nll separate, seldom touching		often touching	more or less closed		
3b.3 Other remarks (include personal conthis wetland site).	nment	bbs jahw juoda e	s to or detracts from the quelity of	÷	
HANKY SU.	دز	ession	, د		

Sec1-w05				
Common Name	Botanical Name	Indicator	FQA	notes
slender rush	Juncus tenuis	FAC	0	dominant
giant ragweed	Ambrosia trifida	FAC+	0	dominant
yellow-seed false pimpernel	Lindemia dubia	OBL	3	dominant
Pennsylvania smartweed	Polygonum pennsylvanicum	FACW+	4	dominant
blunt spikerush	Eleocharis obtusa	OBL	1	dominant
sedge	Carex sp.	FACW	2	<u> </u>
whitegrass	Leersia virginica	FACW	4	
Japanese bristle grass	Setaria faberi	FACU+	*	exotic
total hydrophytic taxa observed			7	
average of FQA (dominant wetland species only)			1.6	
number of indicator taxa	<u> </u>		0	-

•

I-69 Wetland Quality Assessment Profile

Wetland Impact #3 2/17/2006 Section 1 **W07** 08/25/05 Date Report Generated:
Wetland site:
Data reference #
Date of site visit:
Total wetland area:

acres
0.231

Polygon Information		
CI copylod	C	
	, , ,	
Polygon Size (acres)	0.231	
Wetland Community Type	SFB	
Red Flag (Special) Indicators		
Special Hydrologic Conditions	z	
Special Community Type	z	
Rare-Threatened-Endangered Species	Z	
Animal Habitat Measures		
Wetland size and connectivity	7	
Surrounding land use	2	
Standing water	-	
Dead woody material	-	
Zonation and interspersion	က	
Stratification	-	
Tree canopy	-	
Mature trees	1	
Animal Habitat Measure Score (min = 8, max = 24,	12	
Animal Habitat Measure Rating	poor	
Botanical Measures (all except exotics dependent upon community type)		
Number of dominant plant taxa observed	_	
Conservatism rating	-	
Total hydrophytic taxa observed	_	
Number of indicator taxa	-	
Exotic species rating	2	
Botanical Measure Score (min = 5, max = 15)	9	
Botanical Measure Rating	poor	
Hydrology Measures		
Water quality protection $(= no. of yes answers)$	4	
Flood and storm water storage (= no. of yes answers)	3	
Site/Hydrology Score (min = 11, max = 33)	25	
Site/Hydrology Rating	fair	

In-WRAP Summary Sheet

Date Report Generated: 8-30-05
Wetland site name: Sec1-wo7 Data Reference # —
Date of Site Visit: 8-25-05
NWI polygons in Site (quadrangle and NWI id. numbers):
TIER 1 SUMMARY:
a. Total wetland area (hectares): 0.093 hectares (0.23 acres)
b. Wetland size and connectivity - contribution to animal habitat:
□ Valuable □ More Favorable
c. Surrounding land use - numerical rank (max. = 1): 6.52
d. Value surrounding area adds to animal habitat: ☐ Valuable 🛕 Favorable ☐ Low
TIER 2 SUMMARY NWI Polygon Id
a. Indiana Wetland community type: Seasonally Planded Basin
b. Standing water - contribution to animal habitat: Valuable Favorable Neutral
c. Disturbances to site: <u>\NOYre</u>
d. Exotic species rating: ☐ Good M Medium ☐ Poor
e. Special Hydrologic Conditions Observed:
f. Special Community Type:
g. Rare-Threatened-Endangered Species:
h. Polygon QualityDescriptor: □ Good ØMedium □Poor
TIER 3A SUMMARY
a. Dead woody material as indicator of animal habitat: ☐ Valuable ☐ Favorable 🛱 Neutral
b. Water quality protection - numerical rank (6 max.): 4 Rating: □Good ®Medium □Poor
c. Flood and storm water storage - numerical rank (5 max.): _3 Rating: □Good Medium □Poor
TIER 3B SUMMARY
a. Zonation and interspersion as indicator of animal habitat:
b. Stratification as indicator of animal habitat: □ Valuable 57/Neutral
c. Number of dominant plant taxa observed: <u>多</u> Rating: □ Good □ Medium 図Poor
d. Average coefficient of conservatism: 15 Rating: □ Good □ Medium & Poor
e. Tree canopy as indicator of animal habitat: □ Valuable ⊠Neutral
f. Mature trees as indicator of animal habitat: □ Valuable □ Favorable ☒ Neutral
g. Total hydrophytic taxa observed: 10 Rating: Good Medium
h. Number of indicator taxa: 6 Rating: Good Medium Poor

Project #: 630736 / 00	
Project #: <u>630736 / 00</u> -W07	_
, , ,	
	_
	_
(Polygon-specific data)	-
· · · · · · · · · · · · · · · · · · ·	7
	\dashv
	7
	اــ
	_
ions: Sunny, 80'S	
ons within this wetland system (e.g.	
	_
acina c	
aires	
	-
•	
r wetlands	
Wedanus	
perimeter of the wetland site (indicate t	%
The state of the s	. •
16	
ance: <u>46</u>	
<u>(øo</u>	
	

1.1 Site Identification	/11.							
Project Site Name:	1 - 1	107						
Ownership (if known		10+						
USGS Topgraphic Q		(1) - 0.0	Calld					<u> </u>
USGS Watershed 14			•	4 5 6 6				
		0519						
Identify each Nationa	al Wetland Inv	entory (NWI)	Polygon with	hin the proje	ect site (Poly	gon-specifi	ic data)	
NWI Polygon ID#								
Cowardin Classificat	ion	PEN-1-18-11			<u> </u>			
Polygon Size (hectar	es)	0.093			<u>l</u>			
1.2 Site Visit:								
Team Members:	PMC &	MWW						
Company/Agency:	JENEM				· · · · · · · · · · · · · · · · · · ·			
Date Assessed:	8-25-05	_ Time:	1015AM	Weather	Conditions:	Sunna	, 80'5	
1.3 Wetland Size: Size of site being as								
J.	sessed:	-0,09	3 hecto	ves - C	'123 a(r	45		
-		 contiguous w	3 Me (40 etland polyge	.v <i>e</i> s - (ons):	1:23 a(r	<u>es </u>		
Size of total wetland		0,09 contiguous w	3 Necdo etland polygo	ons):	1:23 acr	<u>e</u> 5		
Size of total wetland 1.4 Site Setting: Degree of isolation is	complex (all	contiguous w	etland polygo	ons):	1.23 acr	25		
Size of total wetland 1.4 Site Setting:	rom other we Site is col	contiguous w tland comple: nnected upsti nnected upsti nnected dowr tlands are wit	etland polygonets: ream and dooream with otherstream with	ons): wnstream w ner channels other wetla	ith other wet			
Size of total wetland 1.4 Site Setting:	from other we Site is con	contiguous w tland comple: nnected upstr nnected dowr tlands are wit plated	etland polygonees: Team and door Team with other Team with other The stream with the stream wi	wnstream w ner channels other wetla but not cor	ith other wells s nds nnected	iands		
Size of total wetland 1.4 Site Setting: Degree of isolation to	complex (all from other we Site is con Site is con Other we Site is iscont of adjacent type): Native Ve Agricultur Agricultur Recreation	tland completed upstrancted upstrancted upstrancted downtlands are with blated land use/land egetation- old re - tilled re- pasture on- green spaghway/Railroa	retland polygoneters: ream and dooream with otherstream with thin 0.25 mile I cover within the cover withi	wnstream wher channels other wetland but not cor	ith other wells s nds nnected	lands eter of the	wetland site	
Size of total wetland 1.4 Site Setting: Degree of isolation to	from other we Site is con Other we Site is isc of adjacent type): Native Ve Agricultur Recreatio Road/Hig	tland completed upstrancted upstrancted upstrancted downtlands are with blated land use/land egetation- old re - tilled re- pasture on- green spaghway/Railroa	retland polygoneters: ream and dooream with otherstream with the one of the order within one of the order within one of the order of t	wnstream wher channels other wetland but not cor	ith other were saids annected of the perim	lands eter of the	wetland site	

NWI Polygon ID#	Project #:
Tier 2 Individu	al Polygon: Preliminary Assessment (for each wetland polygon present on-site)
	emorphic Setting and Surface Water Flow:
	Depressional Riverine (within the river/stream banks) Lacustrine Slope
2.2 Presence of	Standing Water:
Is standing water r	normally present in the polygon?
	If yes, is the water greater than 2 meters in depth?
	Is standing water normally present in an adjacent polygon?
2.3 Apparent Hyd	droperiod:
	☐ Permanently Flooded ☐ Seasonally Flooded ☐ Artificially Flooded ☐ Artificially Drained ☐ Saturated (surface water seldom present)
2.4 Soil Type:	
	☐ Organic (ie. Peat, etc.) ☑ Mineral ☐ Both Mineral and Organic Present
2.5 Wetland Com	nmunity Type for this polygon (See Key to Wetland Communities of Indiana):
	Spasonallu-Rooded basin
2.6 Disturbances	s of Hydrology: None
	☐ Ditching ☐ Road or Railroad Embankment ☐ Culvert ☐ Dams ☐ Other Human Disturbances to the Hydrology ☐ Describe:
2.7 Presence of I	Invasice Exotic Vegetation:
	☐ Garlic Mustard ☐ Glossy Buckthorn ☐ Phragmites ☐ Reed Canary Grass ☐ Purple Loosestrife ☐ Other ☐ List:
2.8 Presence of	Special Hydrologic Conditions (ie. seeps, wet slopes, floating mats):
	n/a
2.9 Presence of	Special Community Types: None
☐ Bog	☐ Fen ☐ Wet Sand/ Muck Flats or Marl Seeps ☐ Sinkhole pond or swamp
2.10 Presence of	f Known Federal or Indiana Rare, Threatened, or Endangered Species (RTES):
	None Observed or Known To Be Present RTES Present (list):
2.11 Wetland Pol	lygon Quality Descriptor (see Wetland Quality Descriptions, and check one below):
	Good Medium Door

NWI Polygon ID #:		Project #: <u>030730 / 00</u>
Tier 3a Individe	ual Polygon: Rapid Hydrology Indicators	1-W07
3a.1 Notable Feat	tures That Influence Water Quality and Hydrology:	
Estimated Woody i	Plant Foliar Coverage in the Polygon Oddy Material on the Soil Surface:	☐ 50-25 ☐ <25 ☐ 50-25 ☐ <25
, -		Frequent (>20% cover)
	ty Protection Questions:	
1. Yes No	The wetland has a significant amount of vegetative (specifically adensity to potentially uptake dissolved nutrients.	nerbaceous and wood plants)
2. Yes No	Managed Water (eg. Municipal or storm water drainage, agricultr municipal wastewater) is not discharged into the wetland polygo	ural drainage outlet, industrial or on.
If the wetland in qu 3a.	restion is a depressional wetland, respond to questions 3a. If not, The wetland has a shape or flow that allows for the settling out of the water reaches the center of the wetland.	answer 3b. If suspended materials before
3b. Yes No	The position of the wetland in the landscape is such that run-off a surface body of water down-gradient.	is held or filtered before entering
1. Yes 🗌 No	Within 100 meters of its borders, the wetland <i>lacks</i> steep slope moderate slopes with row cropping, or areas of severe overgrazing.	s, large impervious areas, ing.
5. Yes ANO	There are recreational lakes, fishable or navigable watercourses gradient in the local watershed.	, or water supply sources down-
6. Yes No	There is a vegetative buffer area (>15 meters wide), or another overland flow can be filtered) located upland and adjacent to the describe the buffer area width and slope:	wetland polygon (areas where wetland polygon. If yes,
	Ave. buffer width (meters): $ > 100 \text{ yr} $ Approx.	slope (%): 170
3a.2 Water Quali	ty Protection Questions:	
If the wetland in quality 1a. Yes No	uestion is a depressional wetland, answer 1a. If not, answer 1b. The wetland is surrounded by a buffer of natural vegetation (fore slow overland flow into the wetland.	ested, old field, scrub) that will
1b. Yes No	There is a significant of microtopography or vegetative density we velocity of water leaving the wetland.	vithin the wetland to reduce the
2. ⊠Yes □No	The wetland <i>lacks</i> man-made structures that would speed the f (eg. tiles, culverts, ditches).	low of water from the wetland
3. ∑Yes □ No	The flood potential of the local watershed in which the wetland is damages).	s located is high (history of flood
4. ☐ Yes ☐ No	The wetland is located in a watershed in which the majority of the impermeable, or bedrock is within two feet of the top of the soil	ne upland soils are clayey and profile.
5. Yes No	The wetland is located in a watershed in which there are highly existing development. (e.g. >5% of area is row crop, commercia	modified conditions due to
	•	

. . .

tussocks; heterogeneous textures Polygon composed of a single veg across the polygon 2. If more than one vegetation zone is present in the polygon, which in the distribution of these zones? Type One Interspersion Type One Interspersion 3b.2 Dominant Plant Species: Vegetation Zone A What percentage of the polygon does this vegetation zone occupy? 10-25% 25-50% 50-75% 75-90% Is there notable layering/stratification in this vegetation zone?	best describes the site? small vegetation patches, hummocks, or across the polygon letation type with more or less uniform texture
1b. If only one vegetation zone is evident, which Polygon composed of a mosaic of tussocks; heterogeneous textures Polygon composed of a single veg across the polygon Polygon composed of a single veg across the polygon	small vegetation patches, hummocks, or across the polygon letation type with more or less uniform texture interspersion diagram most closely represents Type Two Interspersion Observation Point #1 Roll/Photo number(s):
1b. If only one vegetation zone is evident, which Polygon composed of a mosaic of tussocks; heterogeneous textures Polygon composed of a single veg across the polygon Polygon composed of a single veg across the polygon composed of a single veg across the polygon Image: Polygon composed of a mosaic of tussocks; heterogeneous textures Polygon composed of a single veg across the polygon which in the distribution of these zones? Image: Type One Interspersion Polygon composed of a mosaic of tussocks; heterogeneous textures Polygon which in the distribution of these zones? Image: Polygon composed of a mosaic of tussocks; heterogeneous textures Polygon which in the polygon, which in the distribution of these zones? Image: Polygon composed of a mosaic of tussocks; heterogeneous textures Polygon which in the polygon, which in the distribution of these zones? Image: Polygon composed of a mosaic of tussocks; heterogeneous textures Polygon which in the polygon, which in the distribution of these zones? Image: Polygon composed of a mosaic of tussocks; heterogeneous textures Polygon which in the polygon, which in the distribution of these zones? Image: Polygon composed of a single veg across the polygon which in the polygon, which in the polygon, which in the polygon, which in the polygon which in the p	small vegetation patches, hummocks, or across the polygon letation type with more or less uniform texture interspersion diagram most closely represents Type Two Interspersion Observation Point #1 Roll/Photo number(s):
Polygon composed of a mosaic of tussocks; heterogeneous textures Polygon composed of a single veg across the polygon 2. If more than one vegetation zone is present in the polygon, which in the distribution of these zones? Type One Interspersion Type One Interspersion Bb.2 Dominant Plant Species: Vegetation Zone A What percentage of the polygon does this vegetation zone occupy? 10-25%	small vegetation patches, hummocks, or across the polygon letation type with more or less uniform texture interspersion diagram most closely represents Type Two Interspersion Observation Point #1 Roll/Photo number(s):
tussocks; heterogeneous textures Polygon composed of a single veg across the polygon If more than one vegetation zone is present in the polygon, which in the distribution of these zones? Type One Interspersion Type One Interspersion b.2 Dominant Plant Species: Vegetation Zone A What percentage of the polygon does this vegetation zone occupy? 10-25% 25-50% 50-75% 75-90% s there notable layering/stratification in this vegetation zone?	across the polygon letation type with more or less uniform texture interspersion diagram most closely represents Type Two Interspersion Observation Point #1 Roll/Photo number(s):
Type One Interspersion Type One Interspersion Decided and the polygon of the po	Observation Point #1 Roll/Photo number(s):
Ab.2 Dominant Plant Species: Vegetation Zone A What percentage of the polygon does this vegetation zone occupy? 10-25%	Observation Point #1 Roll/Photo number(s):
What percentage of the polygon does this vegetation zone occupy? 10-25%	Roll/Photo number(s):
What percentage of the polygon does this vegetation zone occupy? 10-25%	Roll/Photo number(s):
10-25%	
10-25%	
s there notable layering/stratification in this vegetation zone?	
	▽ >90%
Cominant Herbaceous Species (in Coupring and the 400/ 50	☐ Yes No
vith an "*" any species that form extensive monocultural patches):	rea) listed in order of relative abundance (Mari
a sughum halapense	e
canbasia tripida'	fg
d 1	h
Dominant Shrub Species listed in order of relative abundance:	•
a	c
Dominant Tree Species listed in order of relative abundance: P=pole (
a	d
ree and Shrub Canopy:	
nii separate, seldom touching of	ten touching more or less dosed
Mature trees (>12" dbh) present: Yes No	
,	Annaha farans the second secon
Other remarks (include personal comments about what adds to or de	eracts from the quality of this wetland site)
anvider rediment to make to mile to	C4 +4
provides sediment tropping & pollution prior to water critering was	TING HON

NWI Polygon ID	# :				Project #: <u>()/36</u>	1/10/00
3b.2 Dominant Plant Species: Vegetation Zone B			Observat	ion Point #1	1-00	
				Roll/Photo	number(s):	
Albet percentage	of the polygon doe	na thia waaatatia	na zana anaunia		nark location on the	e polygon)
_ `		_	, •			
10-25%	25-50%	50-75%	75-90%	□ >90% —		
	ayering/stratification	_		Yes	□ No	hda /8/-
with an "*" any sp	ceous Species (ie. pecies that form ext	lensive monocul	than 10% of the ltural patches):	area) listeo in	order of relative a	oundance (Ma
	a			е		
	b			f		
	d			9 h		
Dominant Shrub	Species listed in o	rder of relative a	abundance:			
•	a			С		
ı	b			d		
Dominant Tree S	Species listed in ord	ler of relative ab	oundance: P=pol	le (3-12" dbh) a	and M=mature (>1	2" dbh)
	a			С		
				d		
Trop and Chrish	Canony					
Tree and Shrub	ouriopy.					
nil		eparate, seldom touc	thing	often touching	mo	ore or less closed
☐ nit Mature trees (>1		☐ Yes ☐	No	_		
☐ nil Mature trees (>1 Other remarks (se se sent: (include personal co	Yes Comments about	No what adds to or	detracts from	the quality of this w	
☐ nil Mature trees (>1 Other remarks (se 2" dbh) present:	Yes Comments about	No what adds to or	detracts from l	the quality of this w	vetland site)
☐ nil Mature trees (>1 Other remarks (se se sent: (include personal co	Yes Comments about	No what adds to or	detracts from l Observate Roll/Phot	the quality of this w tion Point #1 o number(s):	vetland site)
nil Mature trees (>1 Other remarks (se se sent: (include personal co	Yes Comments about	No what adds to or	Observation (Note: V-	the quality of this w	vetland site)
nil Mature trees (>1 Other remarks (se se 2" dbh) present: (include personal co	Yes Comments about	No what adds to or	Observation (Note: V-	the quality of this w tion Point #1 o number(s):	vetland site)
nil Mature trees (>1 Other remarks (3b.2 Dominant What percentage	e of the polygon do	Yes comments about egetation Zone bes this vegetation 50-75%	No what adds to or C C On zone occupy	Observal Roll/Phot (Note: V-	the quality of this w tion Point #1 o number(s):	vetland site)
nil Mature trees (>1 Other remarks (3b.2 Dominant What percentage 10-25% Is there notable Dominant Herba	se 2" dbh) present: (include personal continue p	egetation Zone bes this vegetation 50-75% on in this vegeta	what adds to or C on zone occupy 75-90% ation zone?	Observation (Note: V-to) Observation (Note: V-to) Yes	the quality of this watton Point #1 o number(s): mark location on the	vetland site)
nil Mature trees (>1 Other remarks (3b.2 Dominant What percentage 10-25% Is there notable Dominant Herba	e of the polygon do 25-50% layering/stratification aceous Species (ie pecies that form ex	Yes comments about egetation Zone es this vegetation50-75% on in this vegeta c. Covering more oftensive monocular	what adds to or C On zone occupy 75-90% Ition zone? Ithan 10% of the olitural patches):	Observat Roll/Phot (Note: V-	tion Point #1 o number(s): mark location on the	vetland site) ne polygon) ne bundance (Ma
nil Mature trees (>1 Other remarks (3b.2 Dominant What percentage 10-25% Is there notable Dominant Herba	e of the polygon do 25-50% layering/stratification aceous Species (ie pecies that form ex	Yes comments about egetation Zone es this vegetation50-75% on in this vegeta c. Covering more oftensive monocular	what adds to or C On zone occupy 75-90% Ition zone? Ithan 10% of the olitural patches):	Observat Roll/Phot (Note: V-	tion Point #1 o number(s): mark location on the	vetland site) ne polygon) ne bundance (Ma
nil Mature trees (>1 Other remarks (3b.2 Dominant What percentage 10-25% Is there notable Dominant Herba	e of the polygon do 25-50% layering/stratification aceous Species (ie pecies that form ex	Yes comments about egetation Zone es this vegetation50-75% on in this vegeta c. Covering more oftensive monocular	what adds to or C On zone occupy 75-90% Ition zone? Ithan 10% of the olitural patches):	Observat Roll/Phot (Note: V-	tion Point #1 o number(s): mark location on the	vetland site) ne polygon) ne bundance (Ma
nil Mature trees (>1 Other remarks () 3b.2 Dominant What percentag	2" dbh) present: (include personal continuity) Plant Species: Volume of the polygon do 25-50% layering/stratification (ceous Species (iepecies that form example) a b c d	Yes omments about egetation Zone this vegetation [50-75% on in this vegetation. Covering more stensive monocut	what adds to or C on zone occupy 75-90% Ition zone? than 10% of the olitural patches):	Observat Roll/Phot (Note: V-	the quality of this watton Point #1 o number(s): mark location on the	vetland site) ne polygon) ne bundance (Ma
nil Mature trees (>1 Other remarks () 3b.2 Dominant What percentag	2" dbh) present: (include personal continuity) Plant Species: Volume of the polygon do 25-50% layering/stratification aceous Species (iepecies that form example of Species listed in continuity)	egetation Zone bes this vegetation 50-75% on in this vegeta c. Covering more stensive monocu	what adds to or C on zone occupy 75-90% Ition zone? than 10% of the Ultural patches):	Observat Roll/Phote (Note: V-i ?	tion Point #1 o number(s): mark location on the	vetland site) ne polygon) abundance (Ma
nil Mature trees (>1 Other remarks () 3b.2 Dominant What percentag	2" dbh) present: (include personal continuity) Plant Species: Volume of the polygon do 25-50% layering/stratification aceous Species (iepecies that form example of Species listed in continuity)	egetation Zone bes this vegetation 50-75% on in this vegeta c. Covering more stensive monocu	what adds to or C on zone occupy 75-90% Ition zone? than 10% of the Ultural patches):	Observat Roll/Phote (Note: V-i ?	tion Point #1 o number(s): mark location on the	vetland site) ne polygon) abundance (Ma
nil Mature trees (>1 Other remarks (3b.2 Dominant What percentage 10-25% Is there notable Dominant Herba with an **** any s	2" dbh) present: (include personal continuity) Plant Species: Volume of the polygon do 25-50% layering/stratification aceous Species (iepecies that form example of Species listed in continuity)	egetation Zone es this vegetation 50-75% on in this vegeta Covering more ctensive monocu	what adds to or C To zone occupy 75-90% Ition zone? Ithan 10% of the older patches): abundance:	Observat Roll/Phot (Note: V-	tion Point #1 o number(s): mark location on the	retland site) ne polygon) abundance (Ma
nil Mature trees (>1 Other remarks (3b.2 Dominant What percentage 10-25% Is there notable Dominant Herba with an **** any s	2" dbh) present: (include personal continuity of the polygon done) 25-50% layering/stratification a b c d c d continuity of the polygon done) Species listed in or description of the polygon done)	egetation Zone es this vegetation 50-75% on in this vegeta Covering more ctensive monocu	what adds to or C To zone occupy 75-90% Ition zone? Ithan 10% of the litural patches): abundance:	Observat Roll/Phote (Note: V-1)?	tion Point #1 o number(s): mark location on the	vetland site) ne polygon) abundance (Ma

NWI Polygon ID #:	Project #:
3b.2 Dominant Plant Species: Vegetation Zone C (cont'd)	
Tree and Shrub Canopy:	
nil separate, seldom touching of	ten touching more or less closed
Mature trees (>12" dbh) present: ☐ Yes ☐ No	5
Other remarks (include personal comments about what adds to or de	tracts from the quality of this wetland site)
3b.2 Dominant Plant Species: Vegetation Zone D	Observation Point #1
	Roll/Photo number(s):
What percentage of the polygon does this vegetation zone occupy?	(Note: V-mark location on the polygon)
☐ 10-25% ☐ 25-50% ☐ 50-75% ☐ 75-90%	>90%
Is there notable layering/stratification in this vegetation zone?	Yes No
Dominant Herbaceous Species (ie. Covering more than 10% of the a with an "*" any species that form extensive monocultural patches):	rea) listed in order of relative abundance (Mark
a	e
ab cd	e
d	g h
Dominant Shrub Species listed in order of relative abundance:	
a b	c
b	c
Dominant Tree Species listed in order of relative abundance: P=pole	(3-12" dbh) and M=mature (>12" dbh)
a	С
ь	d
Tree and Shrub Canopy:	
	ten touching more or less dosed
Mature trees (>12" dbh) present: ☐ Yes ☐ No	
Other remarks (include personal comments about what adds to or de	stracts from the quality of this wetland site)

Sec1-w07				
Common Name	Botanical Name	Indicator	FQA	notes
giant ragweed	Ambrosia trifida	FAC+	0	dominant
common burdock	Arctium minus	UPL	0	exotic/upland
false-nettle	Boehmeria cylindrica	OBL	3	
trumpet creeper	Campsis radican	FAC	1	
stout wood-reedgrass	Cinna arundinacea	FACW	4	
climbing day flower	Commelina diffusa	FACW	0	
field bindweed	Convolvulus arvensis	UPL	0	exotic/upland
barnyard grass	Echinochloa crusgalli	FACW	0	exotic
yerba de tajo	Eclipta prostrata	FACW	3	
fall panic grass	Panicum dichotomiflorum	FACW-	0	
smooth lens grass	Paspalum laeve	FACW-	2	
smartweed (formerly polygonom punctatum)	Persicaria punctata	OBL	3	dominant
allegheny blackberry	Rubus allegheniensis	FACU+	2	upland
japanese bristle grass	Setaria faberi	FACU+	0	exotic/upland
johnson grass	Sorghum halepense	FACU	0	dominant/ upland
total hydrophytic taxa observed			10	
average of FQA (dominant wetland species only)			1.5	-
number of indicator taxa			0	

1-69 Wetland Quality Assessment Profile

Wetland Impact #4 12/1/2005 Section 1 **W08** 08/25/05 Date Report Generated:
Wetland site:
Data reference #
Date of site visit:
Total wetland area:

	_
0000	ט
3000	
c	>

Polygon Information		
Polygon ID	0	
Polygon Size (acres)	0.34	
Wetland Community Type	WW	
Red Flag (Special) Indicators		
Special Hydrologic Conditions	Z	
Special Community Type	Z	
Rare-Threatened-Endangered Species	Z	
Animal Habitat Measures		
Wetland size and connectivity	2	
Surrounding land use	-	
Standing water	~	
Dead woody material	~	
Zonation and interspersion	က	
Stratification	-	
Tree canopy	-	
Mature trees	1	
Animal Habitat Measure Score (min = 8, max = 24,	11	
Animal Habitat Measure Rating	poor	
Botanical Measures (all except exotics dependent upon community type)		
Number of dominant plant taxa observed	7	
Conservatism rating	-	
Total hydrophytic taxa observed	3	
Number of indicator taxa	_	
Exotic species rating	2	
Botanical Measure Score (min = 5, max = 15)	∞	
Botanical Measure Rating	poor	
Hydrology Measures		
Water quality protection (= no. of yes answers)	4	
Flood and storm water storage (= no. of yes answers)	1	
Site/Hydrology Score (min = 11, max = 33)	21	
Site/Hydrology Rating	fair	

In-WRAP Summary Sheet

Date Report Generated:
Data Reference #
Date of Site Visit: 8-25-16 NWI polygons in Site (quadrangle and NWI id. numbers):
TIER 1 SUMMARY:
a. Total wetland area (hectares): 0.1335 hectares (0.33 acres)
b. Wetland size and connectivity - contribution to animal habitat:
□ Valuable □ More Favorable Ď Favorable □ Neutral
c. Surrounding land use - numerical rank (max. = 1): 0.74
d. Value surrounding area adds to animal habitat: □ Valuable □ Favorable Low
TIER 2 SUMMARY NWI Polygon Id
a. Indiana Wetland community type: Wth MYMAW
b. Standing water - contribution to animal habitat: □ Valuable □ Favorable ☑ Neutral
c. Disturbances to site: <u>distring</u> , (nd
d. Exotic species rating: ☐ Good Medium ☐ Poor
e. Special Hydrologic Conditions Observed:
f. Special Community Type:
g. Rare-Threatened-Endangered Species:
h. Polygon QualityDescriptor: ☐ Good ĎMedium ☐Poor
TIER 3A SUMMARY
a. Dead woody material as indicator of animal habitat: ☐ Valuable ☐ Favorable ※Neutral
b. Water quality protection - numerical rank (6 max.): Rating: □Good Medium □Poor
c. Flood and storm water storage - numerical rank (5 max.): 1 Rating: □Good □Medium MPoor
TIER 3B SUMMARY
a. Zonation and interspersion as indicator of animal habitat: ☑Valuable ☐ Favorable ☐ Neutral
b. Stratification as indicator of animal habitat: □ Valuable 爲 Neutral
c. Number of dominant plant taxa observed: Rating: □ Good □ Medium ② Poor
d. Average coefficient of conservatism: 1.33 Rating: □ Good □ Medium NPoor
e. Tree canopy as indicator of animal habitat: □ Valuable ☑ Neutral
f. Mature trees as indicator of animal habitat: Valuable Favorable Neutral
g. Total hydrophytic taxa observed: 22 Rating: Good Medium Poor
h. Number of indicator taxa: Rating: Good Medium Poor
La Cood Britishing

Indiana Wetland Routine Assessment Protocol

Project #: <u>670730 / 00</u>

Tier 1: Assessment Overv 1.1 Site Identification:	'iew				ľ	
Project Site Name: - WOR						
Ownership (if known): USGS Topgraphic Quadrangle(s)						
USGS Watershed 14-digit HUC:		206=				
	05/4020707					
Identify each National Wetland In	ventory (NWI) Polygon wit	hin the proje	ect site (Poly	gon-specific	c data)	
NWI Polygon ID #						
Cowardin Classification	PEM-1-BM					
Polygon Size (hectares)	0.1335	i	<u> </u>	<u> </u>	<u> </u>	
1.2 Site Visit:						
Team Members: EMC &	MWW					·
Company/Agency:	J					
Date Assessed: 8-25-09	Time: <u>930 AM</u>	Weather	Conditions:	Sunny	7015	
Note any unusual weather events recent heavy rains, an unusually				vithin this w	etland syste	m (e.g.
1.3 Wetland Size: Size of site being assessed: Size of total wetland complex (all 1.4 Site Setting:			0.33 a	(res		
Degree of isolation from other we	etland complexes:					
Site is co	onnected upstream and do onnected upstream with ott onnected downstream with etlands are within 0.25 mile	her channels other wetlar	s nds	tlands		
General assessment of adjacent abundance of each type):	land use/land cover within	n 50 meters	of the perim	eter of the v	wetland site	(indicate %
☐ Native V ☑ Agricultu ☐ Agricultu ☐ Recreat	re- pasture ion- green space, mowed ghway/Railroad Bed/Parki	ng Lot	Abundance	20 	- 	
	atial- single family			30	_	
	rcial or Multifamily Resider	ntial			·	

NWI Polygon ID #:		Project #:
Tier 2 Individua	I Polygon: Preliminary Assessment (for each wetland po	olygon present on-site)
2.1 Wetland Geom	norphic Setting and Surface Water Flow:	, and the state of
	☐ Depressional ☐ Riverine (within the river/stream banks) ☐ Slope ☐ Depressional ☐ Lacustrine	· · · · · · · · · · · · · · · · · · ·
2.2 Presence of St	tanding Water:	·
Is standing water no	ormally present in the polygon?	1
	If yes, is the water greater than 2 meters in depth?	☐ Yes ☐ No
	Is standing water normally present in an adjacent polygon?	☐ Yes ☐ No
2.3 Apparent Hydro	operiod:	Environment of the control of the co
·		Artificially Flooded Artificially Drained
2.4 Soil Type:		*
	☐ Organic (ie. Peat, etc.) ☑ Mineral ☐ Both Mineral and Organic Present	
2.5 Wetland Comm	nunity Type for this polygon (See Key to Wetland Communition	es of Indiana);
	wet meadow)	
2.6 Disturbances of	of Hydrology: None	
)	☐ Ditching ☐ Road or Railroad Emban ☐ Tiles ☐ Culvert ☐ Dams ☐ Other Human Disturbance ☐ Describe: Yome = June	
2.7 Presence of Inv	vasice Exotic Vegetation:	3
	☐ Garlic Mustard ☐ Glossy Buckthorn ☐ Phragmites ☐ Reed Canary Grass ☐ Purple Loosestrife ☐ Other(all scattered) List: burdet of	oison hemlock, birdwerd, Stobin's
2.8 Presence of Sp	pecial Hydrologic Conditions (ie. seeps, wet slopes, floating i	mats): agrostis alba gvass
2.9 Presence of Sp	pecial Community Types: None	# T
		Sinkhole pond or swamp
2.10 Presence of K	Known Federal or Indiana Rare, Threatened, or Endangered S	
	None Observed or Known To Be Present RTES Present (list):	(NILO).
2.11 Wetland Polyg	gon Quality Descriptor (see Wetland Quality Descriptions, ar	nd check one below):
	Good	2

NWI Polygon ID #:	Project #: <u>03</u> 0730 / to
Tier 3a Individu	al Polygon: Rapid Hydrology Indicators
3a.1 Notable Feat	ures That Influence Water Quality and Hydrology:
Estimated Woody f Amount of Dead W	us Plant Cover (%) in the Polygon: Plant Foliar Coverage in the Polygon 100-75 75-50 50-25 <25 cody Material on the Soil Surface:
	(<5% cover) Scattered (5-15% cover) Frequent (>20% cover) y Protection Questions:
•	The wetland has a significant amount of vegetative (specifically herbaceous and wood plants) density to potentially uptake dissolved nutrients.
2. Yes No	Managed Water (eg. Municipal or storm water drainage, agricultural drainage outlet, industrial or municipal wastewater) is <i>not</i> discharged into the wetland polygon.
If the wetland in qu	estion is a depressional wetland, respond to questions 3a. If not, answer 3b.
3a. ☐ Yes ☐ No	The wetland has a shape or flow that allows for the settling out of suspended materials before the water reaches the center of the wetland.
3b. 🛚 Yes 🗌 No	The position of the wetland in the landscape is such that run-off is held or filtered before entering a surface body of water down-gradient.
4. Yes No	Within 100 meters of its borders, the wetland <i>lacks</i> steep slopes, large impervious areas, moderate slopes with row cropping, or areas of severe overgrazing.
5. Yes No	There are recreational lakes, fishable or navigable watercourses, or water supply sources downgradient in the local watershed.
6. Yes No	There is a vegetative buffer area (>15 meters wide), or another wetland polygon (areas where overland flow can be filtered) located upland and adjacent to the wetland polygon. If yes, describe the buffer area width and slope:
	Ave. buffer width (meters): 15 m Approx. slope (%):
3a.2 Water Quali	y Protection Questions:
If the wetland in qu 1a. ∏ Yes \\ No	restion is a depressional wetland, answer 1a. If not, answer 1b. The wetland is surrounded by a buffer of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland.
1b. Yes No	There is a significant of microtopography or vegetative density within the wetland to reduce the velocity of water leaving the wetland.
2. Yes No	The wetland <i>lacks</i> man-made structures that would speed the flow of water from the wetland (eg. tiles, culverts, ditches).
3. ☐ Yes 💆 No	The flood potential of the local watershed in which the wetland is located is high (history of flood damages).
4. Yes No	The wetland is located in a watershed in which the majority of the upland soils are clayey and impermeable, or bedrock is within two feet of the top of the soil profile.
5. X Yes 🗀 No	The wetland is located in a watershed in which there are highly modified conditions due to existing development. (e.g. >5% of area is row crop, commercial, or residential use)

NWI Polygon ID #	#:	Project #:
Tier 3b Individ	dual Polygon: Rapid Vegetation Descri	otion
3b.1 Zoning and	·	
1. How many veg	etation zones are evident in this wetland polygon?	\
	1b. If only one vegetation zone is evident, which	ch best describes the site?
	tussocks; heterogeneous texture	of small vegetation patches, hummocks, or es across the polygon regetation type with more or less uniform texture
If more than on the distribution of	ne vegetation zone is present in the polygon, which these zones?	n interspersion diagram most closely represents
	☐ Type One Interspersion	☐ Type Two Interspersion
·		
3b.2 Dominant F	Plant Species: Vegetation Zone A	Observation Point #1
		Roll/Photo number(s): (Note: V-mark location on the polygon)
What percentage	of the polygon does this vegetation zone occupy?	•
10-25%	☐ 25-50% ☐ 50-75% ☐ 75-90%	>90%
	ayering/stratification in this vegetation zone?	Yes 🔽 No
Dominant Herbac with an "*" any soo	ceous Species (ie. Covering more than 10% of the ecies that form extensive monocultural patches):	e area) listed in order of relative abundance (Mark
	a bidance *	A
	o agrosticy alba	f
	a payamm 10	gh
Dominant Shrub	Species listed in order of relative abundance:	
	ab	c
		cd
Dominant Tree Sp	pecies listed in order of relative abundance: P=pol	e (3-12" dbh) and M≃mature (>12" dbh)
	a	d
Free and Shrub C		
[⊅tnil	separate, seldom touching	often touching
Mature trees (>12	· · · · · · · · · · · · · · · · · · ·	
Other remarks (in high	nclude personal comments about what adds to or buttersty use at privides stated to the first and the section of	detracts from the quality of this wetland site) Section of Trapping Organish nearby Stream.

NWI Polygon ID #:	Project #: <u>67-67</u>	30 / 00
3b.2 Dominant Plant Species: Vegetation Zone B	Observation Point #1	1-WC
	Roll/Photo number(s): (Note: V-mark location on the po	olygon)
What percentage of the polygon does this vegetation zone occupy?		
☐ 10-25% ☐ 25-50% ☐ 50-75% ☐ 75-90%	☐ >90%	
Is there notable layering/stratification in this vegetation zone? Dominant Herbaceous Species (ie. Covering more than 10% of the a with an "*" any species that form extensive monocultural patches):	☐ Yes ☐ No urea) listed in order of relative abun	dance (Mar
a	e	
a b c d	e	 .
d	h	_
Dominant Shrub Species listed in order of relative abundance:		
ab	c	
b	d	
Dominant Tree Species listed in order of relative abundance: P=pole	(3-12" dbh) and M=mature (>12" d	bh)
a b	c	
	<u> </u>	
Tree and Shrub Canopy: ☐ nil ☐ separate, seldom touching ☐ of	•	
Other remarks (include personal comments about what adds to or de	etracts from the quality of this wetia	and site)
3b.2 Dominant Plant Species: Vegetation Zone C	Observation Point #1	
Mhatanasatan af tha ashura day this and the	Roll/Photo number(s):	
what percentage of the polygon does this vegetation zone occupy?	(olygon)
What percentage of the polygon does this vegetation zone occupy?		olygon)
□ 10-25% □ 25-50% □ 50-75% □ 75-90%		olygon)
☐ 10-25%	□ >90% □ Yes □ No	, ,
☐ 10-25%	□ >90% □ Yes □ No	, ,
☐ 10-25%	☐ >90% ☐ Yes ☐ No area) listed in order of relative abu	ndance (Ma
☐ 10-25% ☐ 25-50% ☐ 50-75% ☐ 75-90% Is there notable layering/stratification in this vegetation zone? Dominant Herbaceous Species (ie. Covering more than 10% of the awith an "*" any species that form extensive monocultural patches): a	☐ >90% ☐ Yes ☐ No area) listed in order of relative abu	ndance (Ma
☐ 10-25% ☐ 25-50% ☐ 50-75% ☐ 75-90% Is there notable layering/stratification in this vegetation zone? Dominant Herbaceous Species (ie. Covering more than 10% of the awith an "*" any species that form extensive monocultural patches): a	☐ >90% ☐ Yes ☐ No area) listed in order of relative abu	ndance (Ma
☐ 10-25%	□ >90% □ Yes □ No	ndance (Ma
□ 10-25% □ 25-50% □ 50-75% □ 75-90% Is there notable layering/stratification in this vegetation zone? Dominant Herbaceous Species (ie. Covering more than 10% of the awith an "*" any species that form extensive monocultural patches): a b c d Dominant Shrub Species listed in order of relative abundance:	>90% Yes No area) listed in order of relative abune e f g h	ndance (Ma
□ 10-25% □ 25-50% □ 50-75% □ 75-90% Is there notable layering/stratification in this vegetation zone? Dominant Herbaceous Species (ie. Covering more than 10% of the awith an "*" any species that form extensive monocultural patches): a	☐ >90% ☐ Yes ☐ No area) listed in order of relative abuse e f g h c d	ndance (Ma
□ 10-25% □ 25-50% □ 50-75% □ 75-90% Is there notable layering/stratification in this vegetation zone? Dominant Herbaceous Species (ie. Covering more than 10% of the awith an "*" any species that form extensive monocultural patches): a b c d Dominant Shrub Species listed in order of relative abundance:	☐ >90% ☐ Yes ☐ No area) listed in order of relative abuse e f g h c d	ndance (Ma
□ 10-25% □ 25-50% □ 50-75% □ 75-90% Is there notable layering/stratification in this vegetation zone? Dominant Herbaceous Species (ie. Covering more than 10% of the awith an "*" any species that form extensive monocultural patches): a	☐ >90% ☐ Yes ☐ No area) listed in order of relative abuse e f g h c d	ndance (Ma

NWI Polygon ID #:	Project #:
3b.2 Dominant Plant Species: Vegetation Zone C (cont'd)	
Tree and Shrub Canopy:	
nil separate, seldom touching	often touching
Mature trees (>12" dbh) present:	э
Other remarks (include personal comments about what adds to or o	detracts from the quality of this wetland site)
3b.2 Dominant Plant Species: Vegetation Zone D	Observation Point #1
•	Roll/Photo number(s):
What percentage of the polygon does this vegetation zone occupy?	(Note: V-mark location on the polygon)
☐ 10-25% ☐ 25-50% ☐ 50-75% ☐ 75-90%	>90%
. Is there notable layering/stratification in this vegetation zone?	☐ Yes ☐ No
with an "*" any species that form extensive monocultural patches): a b c d	efgh
Dominant Shrub Species listed in order of relative abundance:	•
a b	cd
Dominant Tree Species listed in order of relative abundance: P=pole	
a b	cd
Tree and Shrub Canopy:	
nil separate, seldom touching	often touching more or less dosed
Mature trees (>12" dbh) present: Yes No	
Other remarks (include personal comments about what adds to or	detracts from the quality of this wetland site)

....

Sec1-w08	·			
Common Name	Botanical Name	Indicator	FQA	notes
three-seeded mercury	Acalypha virginica	FACU	0	upland
redtop	Agrostis alba	FACW	0	dominant/
red top	Agrostis gigantea	NI	0	exotic
broom-sedge	Andropogon virginicus var. virginicus	FAC-	1	upland
common burdock	Arctium minus	UPL	0	exotic/upland
swamp milkweed	Asclepias incarnata	OBL	4	exolicrupiano
common beggar's-ticks	Bidens frondosa	FACW	- -	dominant
false-nettle	Boehmeria cylindrica	OBL	3	dominant
fescue oval sedge	Carex festucacea	FAC	2	
hackberry	Celtis occidentalis	FAC-	3	upland
poison hemlock	Conium maculatum	FACW	0	
field bindweed	Convolvulus arvensis	UPL	0	exotic
chufa	Cyperus esculentus	FACW	0	exotic/upland
barnyard grass	Echinochloa crusgalli	FACW		ovetie
mistflower	Eupatorium coelestinum	UPL		exotic
late boneset	Eupatorium serotinum	FAC+	0	upland
grass-leaved goldenrod	Euthamia graminifolia	FACW-	3	
tall fescue	Festuca arundinacea	FACU+	0	unland
green ash	Fraxinus pennsylvanica	FACUT		upland
dwarf st. john's wort	Hypericum mutilum	FACW	<u>'</u>	exotic
common rush	Juncus effusus	OBL	3	exduc
slender rush	Juncus tenuis	FAC	0	
tall wood sorrel	Oxalis stricta	FACU	0	unland
smooth lens grass	Paspalum laeve	FACW-	2	upland
smartweed (formerly polygonom punctatum)	Persicaria punctata	OBL	3	dominant
pennsylvania smartweed	Polygonum pensylvanicum	FACW+	0	dominant
allegheny blackberry	Rubus allegheniensis	FACU+	2	upland
areen bulrush	Scirpus atrovirens	OBL	4	upianu
yellow foxtail	Setaria faberi	FAC		ovotio
carolina nightshade	Solanum carolinense	FACU-	0	exotic
canada goldenrod	Solidago canadensis	FACU	0	upland
blue vervain	Verbena hastata	FACW+	3	upland
prairie ironweed	Veronia fasciculata	FACW	5	
. ,		1 7044		
total hydrophytic taxa observed				22
average of FQA (dominant wetland species only)				1.33333333
number of indicator taxa				0

1-69 Wetland Quality Assessment Profile

Date Report Generated:
Wetland site:
Data reference #
Date of site visit:
Total wetland area:

Wetland Impact #5 2/17/2006 Section 1 **W10** 08/25/05 0.068 acres

Polygon Information		
Polygon ID	0	
Polygon Size (acres)	0.068	
Wetland Community Type	SFB	
Red Flag (Special) Indicators		
Special Hydrologic Conditions	Z	
Special Community Type	Z	
Rare-Threatened-Endangered Species	Z	
Animal Habitat Measures		
Wetland size and connectivity	ო	
Surrounding land use	2	
Standing water	_	
Dead woody material	_	
Zonation and interspersion	_	
Stratification	_	
Tree canopy	-	
Mature trees	1	
Animal Habitat Measure Score (min = 8, max = 24,	11	
Animal Habitat Measure Rating	poor	
Botanical Measures (all except exotics dependent upon community type)	ype)	
Number of dominant plant taxa observed	-	
Conservatism rating	_	
Total hydrophytic taxa observed	2	
Number of indicator taxa	_	
Exotic species rating	2	
Botanical Measure Score (min = 5, max = 15)	7	
Botanical Measure Rating	poor	
Hydrology Measures		
Water quality protection (= no. of yes answers)	4	
Flood and storm water storage (= no. of yes answers)	3	
Site/Hydrology Score (min = 11, max = 33)	25	
Site/Hydrology Rating	fair	

In-WRAP Summary Sheet

Date Report Generated: 8-30-05
Wetland site name:\O Data Reference #
Date of Site Visit: 8-25-05
NWI polygons in Site (quadrangle and NWI id. numbers):
TIER 1 SUMMARY:
a. Total wetland area (hectares): 0.0283 hectares (0.07 acres)
b. Wetland size and connectivity - contribution to animal habitat:
✓ Valuable ☐ More Favorable ☐ Favorable ☐ Neutral
c. Surrounding land use - numerical rank (max. = 1): 0·6_
d. Value surrounding area adds to animal habitat: □ Valuable ເXFavorable □ Low
TIER 2 SUMMARY NWI Polygon Id. —
a. Indiana Wetland community type: Smsmally-flooded basin
b. Standing water - contribution to animal habitat: □ Valuable □ Favorable ☒ Neutral
c. Disturbances to site:
d. Exotic species rating: ☐ Good 🍇 Medium ☐ Poor
e. Special Hydrologic Conditions Observed:
f. Special Community Type:
g. Rare-Threatened-Endangered Species:\NMC
h. Polygon QualityDescriptor: □ Good ØMedium □Poor
TIER 3A SUMMARY
a. Dead woody material as indicator of animal habitat: ☐ Valuable ☐ Favorable ☐ Neutral
b. Water quality protection - numerical rank (6 max.): 4 Rating: □Good ☑Medium □Poor
c. Flood and storm water storage - numerical rank (5 max.): 3 Rating: □Good Medium □Poor
TIER 3B SUMMARY
a. Zonation and interspersion as indicator of animal habitat: 🛭 Valuable 🔻 Favorable 💆 🖎 Neutral
b. Stratification as indicator of animal habitat: □ Valuable □ Neutral
c. Number of dominant plant taxa observed: Rating: ☐ Good ☐ Medium 🖼 Poor
d. Average coefficient of conservatism: Rating: □ Good □ Medium Deor
e. Tree canopy as indicator of animal habitat: □ Valuable □Neutral
f. Mature trees as indicator of animal habitat: □ Valuable □ Favorable ☒ Neutral
g. Total hydrophytic taxa observed: <u>₩</u> Rating: □ Good ⊠ Medium □ Poor
h. Number of indicator taxa: Rating: Good Medium APoor

Indiana Wetland Routine Assessment Protocol Project #: 02073 Tier 1: Assessment Overview 1.1 Site Identification: Project Site Name: Ownership (if known): USGS Topgraphic Quadrangle(s): EVORY-Celd Identify each National Wetland Inventory (NWI) Polygon within the project site (Polygon-specific data) NWI Polygon ID# Cowardin Classification PEM-1-B-n Polygon Size (hectares) 0.0283 1.2 Site Visit: Team Members: EMC & MWW Company/Agency: Date Assessed: Time: 1045AM Weather Conditions: Sunny 80'S Note any unusual weather events that may have influenced the current conditions within this wetland system (e.g. recent heavy rains, an unusually dry season, an especially early spring, etc.): 1.3 Wetland Size: Size of site being assessed: 0,0283 hectares = 0,07 acres Size of total wetland complex (all contiguous wetland polygons): 1.4 Site Setting: Degree of isolation from other wetland complexes: Site is connected upstream and downstream with other wetlands \square Site is connected upstream with other channels Site is connected downstream with other wetlands Other wetlands are within 0.25 mile but not connected Site is isolated General assessment of adjacent land use/land cover within 50 meters of the perimeter of the wetland site (indicate % abundance of each type): Native Vegetation- woodland Abundance: 40 0,4+0,1+=0,5 ☐ Native Vegetation- old field/scrub Agriculture - tilled ☐ Agriculture- pasture Recreation- green space, mowed Road/Highway/Railroad Bed/Parking Lot

☐ Industrial

☐ Residential- single family

☐ Commercial or Multifamily Residential

NWI Polygon ID#:	 -		Project #:
Tier 2 Individua	nl Polygon: Preliminary As	sessment (for each wetland po	lygon present on-site)
	norphic Setting and Surface Wa		
	☐ Depressional☐ Riverine (within the river/stream☐ Slope	☐ Floodplain ☐ Lacustrine	
2.2 Presence of S	Standing Water:		
ls standing water n	ormally present in the polygon?	☐ Yes 🧖 No	
	If yes, is the water greater than 2	2 meters in depth?	☐ Yes ☐ No
	Is standing water normally prese	ent in an adjacent polygon?	☐ Yes ☐ No
2.3 Apparent Hyd	Iroperiod:		
•	☐ Permanently Flooded☐ Seasonally Flooded☐ Saturated (surface water sel		Artificially Flooded Artificially Drained
2.4 Soil Type:			
	☐ Organic (ie. Peat, etc.)☑ Mineral☐ Both Mineral and Organic P	resent	
2.5 Wetland Cor	nmunity Type for this polygon (\$	See Key to Wetland Communit	ies of Indiana):
	Seasmally-P	Tooded Basin	
2.6 Disturbance	s of Hydrology: None		·
	☐ Ditching ☐ Tiles ☐ Dams	☐ Road or Railroad Emba☐ Culvert☐ Other Human DisturbarDescribe:	•
2.7 Presence of	Invasice Exotic Vegetation:		
	☐ Garlic Mustard ☐ Phragmites ☐ Purple Loosestrife	☐ Glossy Buckthorn ☐ Reed Canary Grass ☑ Other All SCATIONS List: _420 A	Hached list
2.8 Presence o	f Special Hydrologic Conditions	i (ie. seeps, wet slopes, floating	g mats):
	n/a		
2.9 Presence o	f Special Community Types: No	one	
☐ Bog	☐ Fen ☐ Wet Sand/ Mu	ck Flats or Marl Seeps	Sinkhole pond or swamp
2.10 Presence	of Known Federal or Indiana Ra	are, Threatened, or Endangered	d Species (RTES):
		To Be Present	
2.11 Wetland F	Polygon Quality Descriptor (see	Wetland Quality Descriptions	, and check one below):
	☐ Good M	ledium 🗌 Poor	

Land dec

.

Control of

NWI Polygon ID #:	Project #: <u>030730 / 06</u>
Tier 3a Individu	Project #: ○3○13○ / 06 -W\□
3a.1 Notable Feat	ures That Influence Water Quality and Hydrology:
Estimated Woody F	us Plant Cover (%) in the Polygon:
	(<5% cover) Scattered (5-15% cover) Frequent (>20% cover)
3a.2 Water Quality	Protection Questions:
1. ⊠Yes · No	The wetland has a significant amount of vegetative (specifically herbaceous and wood plants) density to potentially uptake dissolved nutrients.
2. Yes No	Managed Water (eg. Municipal or storm water drainage, agricultural drainage outlet, industrial or municipal wastewater) is not discharged into the wetland polygon.
If the wetland in quage 3a. Yes No	estion is a depressional wetland, respond to questions 3a. If not, answer 3b. The wetland has a shape or flow that allows for the settling out of suspended materials before the water reaches the center of the wetland.
3b. Yes No	The position of the wetland in the landscape is such that run-off is held or filtered before entering a surface body of water down-gradient.
4. Yes X No	Within 100 meters of its borders, the wetland <i>lacks</i> steep slopes, large impervious areas, moderate slopes with row cropping, or areas of severe overgrazing.
5. Yes X No	There are recreational lakes, fishable or navigable watercourses, or water supply sources downgradient in the local watershed.
6. ⊠Yes □ No	There is a vegetative buffer area (>15 meters wide), or another wetland polygon (areas where overland flow can be filtered) located upland and adjacent to the wetland polygon. If yes, describe the buffer area width and slope:
	Ave. buffer width (meters): 10 m Approx. slope (%): 1506
3a.2 Water Quali	y Protection Questions:
If the wetland in qu 1a. Yes No	restion is a depressional wetland, answer 1a. If not, answer 1b. The wetland is surrounded by a buffer of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland.
1b. ∐Yes ∭Ño	There is a significant of microtopography or vegetative density within the wetland to reduce the velocity of water leaving the wetland.
2. Xyes No	The wetland <i>lacks</i> man-made structures that would speed the flow of water from the wetland (eg. tiles, culverts, ditches).
3. ⊠Yes □ No	The flood potential of the local watershed in which the wetland is located is high (history of flood damages).
4. ☐ Yes 💢 No	The wetland is located in a watershed in which the majority of the upland soils are clayey and impermeable, or bedrock is within two feet of the top of the soil profile.
5. XYes - No	The wetland is located in a watershed in which there are highly modified conditions due to existing development. (e.g. >5% of area is row crop, commercial, or residential use)

NWI Polygon ID #:		Project #:
Tier 3b Individu	al Polygon: Rapid Vegetation D	escription
3b.1 Zoning and Ir	nterspersion:	
1. How many vegeta	ation zones are evident in this wetland po	olygon?
	1b. If only one vegetation zone is evide	ent, which best describes the site?
	tussocks; heterogeneous	mosaic of small vegetation patches, hummocks, or s textures across the polygon single vegetation type with more or less uniform texture
If more than one the distribution of the	vegetation zone is present in the polygor ese zones?	n, which interspersion diagram most closely represents
	☐ Type One Interspersion	☐ Type Two Interspersion
3b.2 Dominant Pla	int Species: Vegetation Zone A	Observation Point #1
		Roll/Photo number(s): (Note: V-mark location on the polygon)
What percentage of	the polygon does this vegetation zone of	
10-25%	☐ 25-50% ☐ 50-75% ☐ 75	-90% × >90%
Is there notable laye	ering/stratification in this vegetation zone	,
Dominant Herbace o with an "*" any speci	ous Species (ie. Covering more than 109 ies that form extensive monocultural pate	% of the area) listed in order of relative abundance (Mark
	a Feltinochloa crusgali b c	e f 9 h
Dominant Shrub Sp	ecies listed in order of relative abundance	ce:
	a	cd
Dominant Tree Spec	cies listed in order of relative abundance	: P=pole (3-12" dbh) and M=mature (>12" dbh)
	a	cd
Tree and Shrub Car	пору:	
🔯 nil	separate, seldom touching	often touching more or less closed
Mature trees (>12" o	dbh) present: Yes No	-
Other remarks (incl	lude personal comments about what add	s to or detracts from the quality of this wetland site)
hia ac	gnly disturbed As as filter to buffer for	nearby stream 4

NWI Polygon ID #:	Observation Point #1 (-W10
3b.2 Dominant Plant Species: Vegetation Zone B	Observation Point #1
	Roll/Photo number(s):
What percentage of the polygon does this vegetation zone occupy?	(Note: V-mark location on the polygon)
	_
☐ 10-25% ☐ 25-50% ☐ 50-75% ☐ 75-90% Is there notable layering/stratification in this vegetation zone?	☐ >90%
Dominant Herbaceous Species (ie. Covering more than 10% of the with an "*" any species that form extensive monocultural patches):	Yes No area) listed in order of relative abundance (Ma
a	е
a b c d	f
d	g h
Dominant Shrub Species listed in order of relative abundance:	
a	c
a b	d
Dominant Tree Species listed in order of relative abundance: P≕pol	e (3-12" dbh) and M=mature (>12" dbh)
ab	c
	α
Tree and Shrub Canopy:	
☐ nil ☐ separate, seldom touching ☑	often touching more or less closed
Mature trees (>12" dbh) present: ☐ Yes ☐ No	
Other remarks (include personal comments about what adds to or	
3b.2 Dominant Plant Species: Vegetation Zone C	Observation Point #1 Roll/Photo number(s):
	(Note: V-mark location on the polygon)
What percentage of the polygon does this vegetation zone occupy?	?
□ 10-25% □ 25-50% □ 50-75% □ 75-90%	
☐ 10-25% ☐ 25-50% ☐ 50-75% ☐ 75-90%	>90%
Is there notable layering/stratification in this vegetation zone?	☐ >90% ☐ Yes ☐ No
	Yes No
Is there notable layering/stratification in this vegetation zone? Dominant Herbaceous Species (ie. Covering more than 10% of the with an "*" any species that form extensive monocultural patches):	Yes No e area) listed in order of relative abundance (N
Is there notable layering/stratification in this vegetation zone? Dominant Herbaceous Species (ie. Covering more than 10% of the with an "*" any species that form extensive monocultural patches):	☐ Yes ☐ No e area) listed in order of relative abundance (N e f
Is there notable layering/stratification in this vegetation zone? Dominant Herbaceous Species (ie. Covering more than 10% of the	Yes No e area) listed in order of relative abundance (N e f
Is there notable layering/stratification in this vegetation zone? Dominant Herbaceous Species (ie. Covering more than 10% of the with an "*" any species that form extensive monocultural patches):	Yes No e area) listed in order of relative abundance (N
Is there notable layering/stratification in this vegetation zone? Dominant Herbaceous Species (ie. Covering more than 10% of the with an "*" any species that form extensive monocultural patches): a b c d Dominant Shrub Species listed in order of relative abundance:	Yes No e area) listed in order of relative abundance (No e f g h
Is there notable layering/stratification in this vegetation zone? Dominant Herbaceous Species (ie. Covering more than 10% of the with an "*" any species that form extensive monocultural patches): a b c d	☐ Yes ☐ No e area) listed in order of relative abundance (N e f
Is there notable layering/stratification in this vegetation zone? Dominant Herbaceous Species (ie. Covering more than 10% of the with an "*" any species that form extensive monocultural patches): a b c d Dominant Shrub Species listed in order of relative abundance:	Yes No e area) listed in order of relative abundance (No e f g h c d
Is there notable layering/stratification in this vegetation zone? Dominant Herbaceous Species (ie. Covering more than 10% of the with an "*" any species that form extensive monocultural patches): a b c d Dominant Shrub Species listed in order of relative abundance: a b	Yes No e area) listed in order of relative abundance (No e f g h c d

NWI Polygon ID#	!:				Project #:	
3b.2 Dominant F	Plant Species: \	egetation Zone	C (cont'd)			
Tree and Shrub C	anopy:					
nil		separate, seldom touch	ning [often touching	more or le	ss closed
Mature trees (>12	" dbh) present:	Yes	No	•		ວ
Other remarks (in		comments about v			e quality of this wetland	l site)
3b.2 Dominant F					on Point #1	
				Roll/Photo	number(s):	
What percentage	of the polygon d	oes this vegetatio	n zone occupy	(Note: V-m	ark location on the poly	gon)
10-25%	25-50%	50-75 %	75-90%	Section > 90%	•	•
Is there notable la	yering/stratificati	on in this vegetati	on zone?	Yes	□No	
Dominant Herbac with an "*" any spe	eous Species (idecies that form e	e. Covering more xtensive monocul	than 10% of th tural patches):	ne area) listed in o	order of relative abunda	ince (Mark
	a		_	e		
	b			f		•
	d			9 h		
Dominant Shrub	Species listed in	order of relative a	bundance:			•
	а			C		
	b			d		
Dominant Tree Sp	pecies listed in o	rder of relative ab	undance: P=p		nd M=mature (>12" dbh	
	a		<u></u>	c		
	b			d		•
Tree and Shrub C	anopy:					
nil 🗌		separate, seldom toud	hing [often touching	more or le	ss closed
Mature trees (>12	" dbh) present:	Yes	No	_		
Other remarks (i	nclude personal	comments about	what adds to o	or detracts from th	e quality of this wetland	d site)
		 			·	

Sec1-w10				
Common Name	Botanical Name	Indicator	FQA	notes
green amaranth	Amaranthus hybridus	UPL	0	exotic/uplane
three-seeded mercury	Acalypha virginica	FACU	0	upland
common burdock	Arctium minus	UPL	0	exotic/upland
panicled aster	Aster simplex	FACW	3	
sedge	Carex sp.	FACW	2	
spotted creeping spurge	Chamaesyce maculata	FACU-	0	upland
field bindweed	Convolvulus arvensis	UPL	0	exotic/upland
straw-color flatsedge	Cyperus strigosus	FACW	0	
barnyard grass	Echinochloa crusgalli	FACW	0	dominant/ exotic
yerba de tajo	Eclipta prostrata	FACW	3	exolic
blunt spikerush	Eleocharis obtusa	OBL	1	
late boneset	Eupatorium serotinum	FAC+	0	
slender rush	Juncus tenuis	FAC	0	
fringed loosestrife	Lysimachia ciliata	FACW	4	
moneywort .	Lysimachia nummularia	FACW+	0	exotic
smooth lens grass	Paspalum laeve	FACW-	2	
smartweed (formerly polygonom punctatum)	Persicaria punctata	OBL	3	
common plantain	Plantago major	FAC+	0	
polygonum buxiforme	Polygonum buxiforme	FAC-	0	upland
pennsylvania smartweed	Polygonum pensylvanicum	FACW+	0	
curly dock	Rumex crispus	FAC+	0	
prairie ironweed	Veronia fasciculata	FACW	5	
total hydrophytic taxa observed	·		16	
average of FQA (dominant wetland species only)			0	-
number of indicator taxa	-		0	

1-69 Wetland Quality Assessment Profile

Date Report Generated:
Wetland site:
Data reference #
Date of site visit:
Total wetland area:

2/17/2006 Section 1 **W17** 08/24/05

Wetland Impact #6

0.109 acres

Polygon Information		
CI nopylod	0	
Dolynon Cize (2008)	0.109	
Wetland Community Type	WW	
Red Flag (Special) Indicators		
Special Hydrologic Conditions	Z	
Special Community Type	Z	
Rare-Threatened-Endangered Species	Z	
Animal Habitat Measures		
Wetland size and connectivity	က	
Surrounding land use	2	
Standing water	-	
Dead woody material	_	
Zonation and interspersion	က	
Stratification	-	
Tree canopy	_	
Mature trees	1	
Animal Habitat Measure Score (min = 8, max = 24,	13	
Animal Habitat Measure Rating	poor	
Botanical Measures (all except exotics dependent upon community type)	(ed	
Number of dominant plant taxa observed	_	
Conservatism rating	_	
Total hydrophytic taxa observed	က	
Number of indicator taxa	-	
Exotic species rating	2	
Botanical Measure Score (min = 5, max = 15)	∞	
Botanical Measure Rating	poor	
Hydrology Measures		
Water quality protection (= no. of yes answers)	က	
Flood and storm water storage (= no. of yes answers)	က	
Site/Hydrology Score (min = 11, max = 33)	23	
Site/Hydrology Rating	fair	

In-WRAP Summary Sheet

Date Report Generated: 8-30-05
Wetland site name: Seci-WIF
Data Reference # Date of Site Visit: 8-24-05
NWI polygons in Site (quadrangle and NWI id. numbers):
TIER 1 SUMMARY:
a. Total wetland area (hectares): 0.0445 hectares (0.11 wres)
b. Wetland size and connectivity - contribution to animal habitat:
©∕Valuable □ More Favorable □ Favorable □ Neutral
c. Surrounding land use - numerical rank (max. = 1): 0.44
d. Value surrounding area adds to animal habitat: □ Valuable 戊 Favorable □ Low
TIER 2 SUMMARY NWI Polygon Id
a. Indiana Wetland community type: WC+ WPAdQA)
b. Standing water - contribution to animal habitat: ☐ Valuable ☐ Favorable ☐ Meutral
c. Disturbances to site: <u>farming herbicide</u>
d. Exotic species rating: ☐ Good Ø Medium ☐ Poor
e. Special Hydrologic Conditions Observed:
f. Special Community Type:
g. Rare-Threatened-Endangered Species:
h. Polygon QualityDescriptor: □ Good Medium □Poor
TIER 3A SUMMARY
a. Dead woody material as indicator of animal habitat: □ Valuable □ Favorable ▼Neutral
b. Water quality protection - numerical rank (6 max.): 3 Rating: □Good Medium □Poor
c. Flood and storm water storage - numerical rank (5 max.): Rating: □Good Medium □Poor
Training. Good Wiledight Brook
TIER 3B SUMMARY
a. Zonation and interspersion as indicator of animal habitat: 🍂 Valuable 🛘 🛭 Favorable 🔻 Neutral
b. Stratification as indicator of animal habitat: Valuable Neutral
c. Number of dominant plant taxa observed: _З Rating: □ Good □ Medium 🛕 Poor
d. Average coefficient of conservatism: 1.33 Rating: Good Medium
e. Tree canopy as indicator of animal habitat: □ Valuable 风Neutral
f. Mature trees as indicator of animal habitat: □ Valuable □ Favorable ▷ Neutral
g. Total hydrophytic taxa observed: ② Rating: ★Good □ Medium □ Poor
h. Number of indicator taxa: Rating: Good Medium & Roor

ina voltana Rodino Asses.	Silicite i rotocoi	1 10,000 m. <u>0 1,</u>	
Tier 1: Assessment Overv	iew		WO3013
Project Site Name: WHO 3	0+3 SPC1-W17		
Ownership (if known):			
USGS Topgraphic Quadrangle(s):	Francisco		
USGS Watershed 14-digit HUC:	051402 02.02 00 3	70	
Identify each National Wetland Inv	ventory (NWI) Polygon within the proje	ect site (Polygon-specific da	ta)
NWI Polygon ID#			
Cowardin Classification	PEM-1-B-N		
Polygon Size (hectares)	0.0446	<u> </u>	
1.2 Site Visit:			
Team Members: FMC,	MW		
Company/Agency:	·		
Date Assessed: 8-24-05	Time: 10 AM Weather	Conditions: SIMMY, 7	0'5
	that may have influenced the current dry season, an especially early spring,		nd system (e.g.
			
1.3 Wetland Size:			
Size of site being assessed: Size of total wetland complex (all	0.0445 Wectares = 0. contiguous wetland polygons):	11 acres	
1.4 Site Setting:			
Degree of isolation from other we	tland complexes:		
☑ Site is con	nnected upstream and downstream wi	ith other wetlands	
	nnected upstream with other channels		
	nnected downstream with other wetlar		
	tlands are within 0.25 mile but not con		
☐ Site is iso			
General assessment of adjacent abundance of each type):	land use/land cover within 50 meters of	of the perimeter of the wetla	nd site (indicate %
Notice Ve	egotation woodland	Abundanas 30	0.3+0.14
	egetation- woodland egetation- old field/scrub	Abundance: 30	0.3+0.19
☐ Native Ve	_	-10	0, 5
☐ Agricultur			
	e- pasture on- green space, mowed		
	hway/Railroad Bed/Parking Lot		
☐ Road/Hig	•		
	ial- single family		
_	cial or Multifamily Residential		
- Commen	not of manufacting (Applicating)		

NWI Polygon ID #:			Project #:
Tier 2 Individua	al Polygon: Preliminary Asses	s ment (for <u>each</u> wetland	d polygon present on-site)
	norphic Setting and Surface Water		
	Depressional Riverine (within the river/stream b	☐ Floodplair panks) ☐ Lacustrine	
2.2 Presence of S	tanding Water:		
Is standing water no	ormally present in the polygon?	☐ Yes 🗵 N	0
	If yes, is the water greater than 2 me	ters in depth?	☐ Yes ☐ No
	Is standing water normally present in	an adjacent polygon?	☐ Yes ☐ No
2.3 Apparent Hyd	roperiod:		
·	☐ Permanently Flooded ☐ Seasonally Flooded ☑ Saturated (surface water seldom	present)	Artificially Flooded Artificially Drained
2.4 Soil Type:			
	☐ Organic (ie. Peat, etc.)☑ Mineral☐ Both Mineral and Organic Present	ut	
2.5 Wetland Com	munity Type for this polygon (See K	ey to Wetland Commun	ities of Indiana):
	wet meadow		
2.6 Disturbances	of Hydrology: None		
	☐ Ditching [☐ Tiles ☐ Dams ☐	☐ Road or Railroad Emb ☐ Culvert ☑ Other Human Disturba Describe: পুণাঠুন পু	pankment ances to the Hydrology SOMYING WATOW
2.7 Presence of Ir	nvasice Exotic Vegetation:	forming	
	☐ Garlic Mustard ☐ Phragmites ☐ Purple Loosestrife	☐ Glossy Buckthorn☐ Reed Canary Grass☐ Other all scaltcred List: — 500 €	attached list-
2.8 Presence of S	pecial Hydrologic Conditions (ie. so	eeps, wet slopes, floatin	ng mats):
	na		
2.9 Presence of S	pecial Community Types None		
☐ Bog	☐ Fen ☐ Wet Sand/ Muck Flat	s or Marl Seeps	☐ Sinkhole pond or swamp
2.10 Presence of	Known Federal or Indiana Rare, Th	reatened, or Endangere	d Species (RTES):
	None Observed or Known To Be RTES Present (list):		
2.11 Wetland Poly	ygon Quality Descriptor (see Wetlar	nd Quality Descriptions ,	, and check one below):
		☐ Poor	·

NWI Polygon ID #:	Р	roject#: 030730 /&
Tier 3a Individu	ual Polygon: Rapid Hydrology Indicators	W03013
3a.1 Notable Feat	tures That Influence Water Quality and Hydrology:	
Estimated Woody & Amount of Dead W	Plant Cover (%) in the Polygon: Plant Foliar Coverage in the Polygon Plant Foliar Coverage Plant Cover (%) in the Polygon: 100-75	□ 50-25
• •	y Protection Questions:	equent (>20% cover)
1. Yes No	The wetland has a significant amount of vegetative (specifically he density to potentially uptake dissolved nutrients.	rbaceous and wood plants)
2. Yes No	Managed Water (eg. Municipal or storm water drainage, agricultura municipal wastewater) is <i>not</i> discharged into the wetland polygon.	al drainage outlet, industrial or
If the wetland in qu 3a. ☐ Yes ☑ No	estion is a depressional wetland, respond to questions 3a. If not, are The wetland has a shape or flow that allows for the settling out of state water reaches the center of the wetland.	nswer 3b. suspended materials before
3b. Yes No	The position of the wetland in the landscape is such that run-off is a surface body of water down-gradient.	held or filtered before entering
4. Yes No	Within 100 meters of its borders, the wetland <i>lacks</i> steep slopes, moderate slopes with row cropping, or areas of severe overgrazing	large impervious areas,].
5. Yes No	There are recreational lakes, fishable or navigable watercourses, or gradient in the local watershed.	or water supply sources down-
6. X Yes No	There is a vegetative buffer area (>15 meters wide), or another we overland flow can be filtered) located upland and adjacent to the widescribe the buffer area width and slope:	etland polygon (areas where retland polygon. If yes,
	Ave. buffer width (meters): >50 m Approx. slo	ope (%): <u>>\5 %</u>
3a.2 Water Qualit	y Protection Questions:	
If the wetland in quality in the latest the latest	restion is a depressional wetland, answer 1a. If not, answer 1b. The wetland is surrounded by a buffer of natural vegetation (forest slow overland flow into the wetland.	ed, old field, scrub) that will
1b. Yes No.	There is a significant of microtopography or vegetative density with velocity of water leaving the wetland.	nin the wetland to reduce the
2. Yes No	The wetland <i>lacks</i> man-made structures that would speed the flow (eg. tiles, culverts, ditches).	w of water from the wetland
3. Yes No	The flood potential of the local watershed in which the wetland is ledamages).	ocated is high (history of flood
4. ☐ Yes 🂢 No	The wetland is located in a watershed in which the majority of the impermeable, or bedrock is within two feet of the top of the soil pro	upland soils are clayey and ofile.
5. X Yes No	The wetland is located in a watershed in which there are highly more existing development. (e.g. >5% of area is row crop, commercial, or	odified conditions due to
		,

NWI Polygon ID #:	Project #:
Tier 3b Individual Polygon: Rapid Vegetation Descri	ption
3b.1 Zoning and Interspersion:	
1. How many vegetation zones are evident in this wetland polygon?	
1b. If only one vegetation zone is evident, whi	ch best describes the site?
`tussocks; heterogeneous textur	of small vegetation patches, hummocks, or res across the polygon vegetation type with more or less uniform texture
2. If more than one vegetation zone is present in the polygon, which the distribution of these zones?	h interspersion diagram most closely represents
☐ Type One Interspersion	Type Two Interspersion
3b.2 Dominant Plant Species: Vegetation Zone A	Observation Point #1
	Roll/Photo number(s): (Note: V-mark location on the polygon)
What percentage of the polygon does this vegetation zone occupy	
10-25%	☑ >90%
Is there notable layering/stratification in this vegetation zone?	Yes 🔀 No
Dominant Herbaceous Species (ie. Covering more than 10% of the with an "*" any species that form extensive monocultural patches):	e area) listed in order of relative abundance (Mark
b Eupotonium perfoliaturn c revotina	e f g h
Dominant Shrub Species listed in order of relative abundance:	
a n/a b	c
Dominant Tree Species listed in order of relative abundance: P=po	ole (3-12" dbh) and M=mature (>12" dbh)
a <u> </u>	c
Tree and Shrub Canopy:	·
nil separate, seldom touching	often touching more or less closed
Mature trees (>12" dbh) present: ☐ Yes ☑ No	
Other remarks (include personal comments about what adds to or + = butterfly habitat, filters ninoto tamphibian	from agraeld

3b.2 Dominant			
	Plant Species: Vegetation Zone B	Project #: <u>030 +</u> Observation Point #1	M0301.
		Roll/Photo number(s):	
		(Note: V-mark location on the pe	olygon)
What percentage	e of the polygon does this vegetation zone occupy?	_	
10-25%	☐ 25-50% ☐ 50-75% ☐ 75-90%		
	layering/stratification in this vegetation zone?	Yes No	
	ceous Species (ie. Covering more than 10% of the pecies that form extensive monocultural patches):	area) listed in order of relative abur	idance (Ma
, -	•	е	
	ab cd	e f	
•	d	g h	
Cominant Shrut	Species listed in order of relative abundance:	· · · · · · · · · · · · · · · · · · ·	
	·	C	
	a b	d	
Dominant Tree :	Species listed in order of relative abundance: P=pole	e (3-12" dbh) and M=mature (>12" d	ibh)
	a b	cd	
Tree and Shrub	Canopy:		
nil nil	separate, seldom touching	often touching more o	or less closed
	12" dbh) present: Yes No		
	(include personal comments about what adds to or	detracts from the quality of this wetle	and site)
			and site)
3b.2 Dominan	t Plant Species: Vegetation Zone C	Observation Point #1	
3b.2 Dominan		Observation Point #1 Roll/Photo number(s):	
		Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the p	
	t Plant Species: Vegetation Zone C ge of the polygon does this vegetation zone occupy?	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the p	
What percentaç ☐ 10-25%	t Plant Species: Vegetation Zone C ge of the polygon does this vegetation zone occupy?	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the p	
What percentage 10-25% Is there notable	t Plant Species: Vegetation Zone C ge of the polygon does this vegetation zone occupy? ☑ 25-50% ☐ 50-75% ☐ 75-90% ge layering/stratification in this vegetation zone?	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the point #2) >90% Yes No	polygon)
What percentage 10-25% Is there notable Dominant Herb	t Plant Species: Vegetation Zone C ge of the polygon does this vegetation zone occupy? ✓ 25-50% ☐ 50-75% ☐ 75-90%	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the point #2) >90% Yes No	oolygon)
What percentage 10-25% Is there notable Dominant Herb	t Plant Species: Vegetation Zone C ge of the polygon does this vegetation zone occupy? 25-50%	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the point poin	oolygon) indance (M
What percentage 10-25% Is there notable Dominant Herb	t Plant Species: Vegetation Zone C ge of the polygon does this vegetation zone occupy? 25-50%	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the point poin	oolygon) indance (Ma
What percentage 10-25% Is there notable Dominant Herb	t Plant Species: Vegetation Zone C ge of the polygon does this vegetation zone occupy? 25-50%	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the point poin	oolygon) Indance (Ma
What percentage 10-25% Is there notable Dominant Herb with an *** any	t Plant Species: Vegetation Zone C ge of the polygon does this vegetation zone occupy? 25-50%	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the point poin	oolygon) Indance (Ma
What percentage 10-25% Is there notable Dominant Herb with an "*" any	t Plant Species: Vegetation Zone C ge of the polygon does this vegetation zone occupy? 25-50%	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the point poin	oolygon)
What percentage 10-25% Is there notable Dominant Herb with an "*" any	t Plant Species: Vegetation Zone C ge of the polygon does this vegetation zone occupy? 25-50%	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the point poin	oolygon)
What percentage 10-25% Is there notable Dominant Herb with an "*" any	t Plant Species: Vegetation Zone C ge of the polygon does this vegetation zone occupy? 25-50%	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the point poin	oolygon)
What percentage 10-25% Is there notable Dominant Herb with an """ any Dominant Shru	t Plant Species: Vegetation Zone C ge of the polygon does this vegetation zone occupy? 25-50%	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the point poin	oolygon) Indance (Ma
What percentage 10-25% Is there notable Dominant Herb with an """ any Dominant Shru	t Plant Species: Vegetation Zone C ge of the polygon does this vegetation zone occupy? 25-50%	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the point poin	oolygon) Indance (Ma

Sec1-w17				
Common Name	Botanical Name	Indicator	FQA	notes
redtop	Agrostis alba	FACW	0	exotic
three-seeded mercury	Acalypha virginica	FACU	0	upland
slender false foxglove	Agalinus tenuifolia	FACW	4	
annual ragweed	Ambrosia artemisiifolia	FACU	0	upland
giant ragweed	Ambrosia trifida	FAC+	0	And the second s
fox sedge	Carex vulpinoidea	OBL	2	
canada horseweed	Conyza canadensis	FAC-	0	upland
trefoil	Desmodium sp.	FACU	0	upland
hairy crab grass	Digitaria sanguinalis	FACU	0	exotic/upland
barnyard grass	Echinochloa crusgalli	FACW	0	dominant/ exotic
common boneset	Eupatorium perfoliatum	FACW+	4	dominant
late boneset	Eupatorium serotinum	FAC+	0	dominant
grass-leaved goldenrod	Euthamia graminifolia	FACW-	3	
fescue	Festuca sp.	UPL	0	upland
dwarf st. john's wort	Hypericum mutilum	FACW	4	exotic
short-headed rush	Juncus brachycephalus	OBL	7	
common rush	Juncus effusus	OBL	3	
inland rush	Juncus interior	FAC+	3	
slender rush	Juncus tenuis	FAC	0	V
cardinal flower	Lobelia cardinalis	OBL	4	
indian tobacco	Lobelia inflata	FACU-	3	upland
great blue lobelia	Lobelia siphilitica	FACW+	3	
bushy seedbox	Ludwigia alternifolia	OBL	3	
narrow-leaf primrose willow	Ludwigia polycarpa	OBL	4	
alleghany monkeyflower	Mimulus ringens	OBL	4	
pennsylvania smartweed	Polygonum pensylvanicum	FACW+	0	
cottonwood	Populus deltoides	FAC+	1	
curly dock	Rumex crispus	FAC+	0	
green bulrush	Scirpus atrovirens	OBL	4	
canada goldenrod	Solidago canadensis	FACU	0	upland
viscid field sow thistle	Sonchus arvensis	FAC-	0	exotic/upland
perennial woolly-bean	Strophyostyles umbellata	FACU	4	upland
blue vervain	Verbena hastata	FACW+	3	1
total hydrophytic taxa observed			23	
average of FQA (dominant wetland species only)			1.333333	
number of indicator taxa			1.333333	White and the state of the stat

1-69 Wetland Quality Assessment Profile

Wetland Impact #7

2/17/2006 Section1 **W18** 08/24/05 0.125 acres Date Report Generated:
Wetland site:
Data reference #
Date of site visit:
Total wetland area:

Polygon Information	
Polygon ID	0
Polygon Size (acres)	0.125
Wetland Community Type	NW
Red Flag (Special) Indicators	
Special Hydrologic Conditions	z
Special Community Type	z
Rare-Threatened-Endangered Species	
Animal Habitat Measures	
Wetland size and connectivity	2
Surrounding land use	-
Standing water	-
Dead woody material	-
Zonation and interspersion	-
Stratification	-
Tree canopy	-
Mature trees	1
Animal Habitat Measure Score (min = 8, max = 24,	တ
Animal Habitat Measure Rating	poor
Botanical Measures (all except exotics dependent upon community type)	
Number of dominant plant taxa observed	-
Conservatism rating	-
Total hydrophytic taxa observed	1
Number of indicator taxa	-
Exotic species rating	2
Botanical Measure Score (min = 5, max = 15)	9
Botanical Measure Rating	poor
Hydrology Measures	i
Water quality protection (= no. of yes answers)	2
Flood and storm water storage (= no. of yes answers)	
Site/Hydrology Score ($min = 11$, $max = 33$)	17
Site/Hydrology Rating	poor

In-WRAP Summary Sheet

Wetla Data	report Generated:
Date :	of Site Visit: 8-24-06
IAAAI I	polygons in Site (quadrangle and NWI id. numbers):
TIEF	R1SUMMARY:
	a. Total wetland area (hectares): 0.048(a hectares (0.12 acres)
	b. Wetland size and connectivity - contribution to animal habitat:
	□ Valuable 🏚 More Favorable 🗆 Favorable 🗈 Neutral
	c. Surrounding land use - numerical rank (max. = 1): 0.72
•	d. Value surrounding area adds to animal habitat: □ Valuable □ Favorable 岚Low
TIER	R 2 SUMMARY NWI Polygon Id
	a. Indiana Wetland community type:
	b. Standing water - contribution to animal habitat: □ Valuable □ Favorable 💢 Neutral
	c. Disturbances to site:
	d. Exotic species rating: ☐ Good
	e. Special Hydrologic Conditions Observed:
	f. Special Community Type:
	g. Rare-Threatened-Endangered Species:
	h. Polygon QualityDescriptor: ☐ Good
TIER	R 3A SUMMARY
	a. Dead woody material as indicator of animal habitat: ☐ Valuable ☐ Favorable 🗷 Neutral
	b. Water quality protection - numerical rank (6 max.): 2_ Rating: □Good □Medium №Po
	c. Flood and storm water storage - numerical rank (5 max.): Rating: □Good □Medium XPe
TIER	R 3B SUMMARY
	a. Zonation and interspersion as indicator of animal habitat: 🛭 Valuable 🗎 Favorable 🥻 Neu
	b. Stratification as indicator of animal habitat: □ Valuable 🙎 Neutral
	c. Number of dominant plant taxa observed: ○ Rating: □ Good □ Medium ② Poor
	d Average coefficient of several 1
	e. Tree canopy as indicator of animal habitat: □ Valuable ☒ Neutral
	f Maturo troop on indicates of activities
	a Total hydrophytic tous about 1
	b. Niconham of the street
	n. Number of Indicator taxa: _\ Rating: □ Good □ Medium ♠ Poor

Indiana Wetland Routine Assessment Protocol Tier 1: Assessment Overview 1.1 Site Identification: Project Site Name: Ownership (if known): USGS Topgraphic Quadrangle(s): USGS Watershed 14-digit HUC: 05140262620070 Identify each National Wetland Inventory (NWI) Polygon within the project site (Polygon-specific data) NWI Polygon ID# Cowardin Classification PEM-1-B-N Polygon Size (hectares) 0.0486 1.2 Site Visit: Team Members: Company/Agency: Date Assessed: Time: 1030 AM Weather Conditions: Surry 704 Note any unusual weather events that may have influenced the current conditions within this wetland system (e.g. recent heavy rains, an unusually dry season, an especially early spring, etc.): 1.3 Wetland Size: Size of site being assessed: 0.0486 hechanes= 0.12 Size of total wetland complex (all contiguous wetland polygons): 1.4 Site Setting: Degree of isolation from other wetland complexes: ☐ Site is connected upstream and downstream with other wetlands Site is connected upstream with other channels ☐ Site is connected downstream with other wetlands Other wetlands are within 0.25 mile but not connected ☐ Site is isolated General assessment of adjacent land use/land cover within 50 meters of the perimeter of the wetland site (indicate % abundance of each type): ☐ Native Vegetation- woodland Abundance: ☐ Native Vegetation- old field/scrub Agriculture - tilled

Recreation- green space, mowed
Road/Highway/Railroad Bed/Parking Lot
Industrial
Residential- single family
Commercial or Multifamily Residential

☐ Agriculture- pasture

NVVI Polygon ID #:			Project #:
Tier 2 Individua	l Polygon: Preliminary Asse	essment (for <u>each</u> wetlan	
	norphic Setting and Surface Wate		
	Depressional Riverine (within the river/stream Slope	☐ Floodplai n banks) ☐ Lacustrin	
2.2 Presence of S	tanding Water:		
Is standing water no	ormally present in the polygon?	☐ Yes 🖄 N	ło
	If yes, is the water greater than 2 n	neters in depth?	☐ Yes ☐ No
	Is standing water normally present	in an adjacent polygon?	☐ Yes ☐ No
2.3 Apparent Hydr	operiod:		
	☐ Permanently Flooded ☐ Seasonally Flooded ☐ Saturated (surface water seldor	[m present)	Artificially Flooded Artificially Drained
2.4 Soil Type:			
	☐ Organic (ie. Peat, etc.) ☐ Mineral ☐ Both Mineral and Organic Prese	ent	
2.5 Wetland Comm	nunity Type for this polygon (See	Key to Wetland Commun	nities of Indiana):
	wet meadow		•
2.6 Disturbances	of Hydrology: None		
	☑ Ditching☐ Tiles☐ Dams	Road or Railroad Eml Culvert Other Human Disturb Describe:	bankment ances to the Hydrology
2.7 Presence of in	vasice Exotic Vegetation:		
	☐ Garlic Mustard ☐ Phragmites ☐ Purple Loosestrife	☐ Glossy Buckthorn ☐ Reed Canary Grass ☐ Other all scattered List:	ed attached list
2.8 Presence of S	pecial Hydrologic Conditions (ie.	seeps, wet slopes, floati	ng mats):
	· Na		
2.9 Presence of S	pecial Community Types: None		
☐ Bog	☐ Fen ☐ Wet Sand/ Muck Fl	ats or Mari Seeps	Sinkhole pond or swamp
2.10 Presence of	Known Federal or Indiana Rare, T	hreatened, or Endangere	ed Species (RTES):
	None Observed or Known To B		· · · · · · · · · · · · · · · · · · ·
2.11 Wetland Poly	gon Quality Descriptor (see Wetl	and Quality Descriptions	, and check one below):
	Good Medium		2

NWI Polygon ID #:	Project #: <u>036730 / 60</u>
Tier 3a Individ	ual Polygon: Rapid Hydrology Indicators
3a.1 Notable Fea	tures That Influence Water Quality and Hydrology:
Estimated Woody Amount of Dead W	ous Plant Cover (%) in the Polygon: \$\begin{align*} \text{100-75} & \prop 75-50 & \prop 50-25 & \prop <25 \\ \text{Plant Foliar Coverage in the Polygon} & \prop 100-75 & \prop 75-50 & \prop 50-25 & \prop <25 \\ \text{Coody Material on the Soil Surface:} \\ \text{I (<5% cover)} & \prop \text{Scattered (5-15% cover)} & \prop \text{Frequent (>20% cover)}
3a.2 Water Qualit	y Protection Questions:
1. Yes No	The wetland has a significant amount of vegetative (specifically herbaceous and wood plants) density to potentially uptake dissolved nutrients.
2. Yes No	Managed Water (eg. Municipal or storm water drainage, agricultural drainage outlet, industrial or municipal wastewater) is not discharged into the wetland polygon.
If the wetland in qu 3a. ☐ Yes ☐ No	estion is a depressional wetland, respond to questions 3a. If not, answer 3b. The wetland has a shape or flow that allows for the settling out of suspended materials before the water reaches the center of the wetland.
3b. Yes No	The position of the wetland in the landscape is such that run-off is held or filtered before entering a surface body of water down-gradient.
4. ☐ Yes Ø No	Within 100 meters of its borders, the wetland <i>lacks</i> steep slopes, large impervious areas, moderate slopes with row cropping, or areas of severe overgrazing.
5. Yes No	There are recreational lakes, fishable or navigable watercourses, or water supply sources downgradient in the local watershed.
6. ∏Yes ⊠No	There is a vegetative buffer area (>15 meters wide), or another wetland polygon (areas where overland flow can be filtered) located upland and adjacent to the wetland polygon. If yes, describe the buffer area width and slope:
	Ave. buffer width (meters): Approx. slope (%):
3a.2 Water Quali	ty Protection Questions:
If the wetland in quality 1a. Yes No	restion is a depressional wetland, answer 1a. If not, answer 1b. The wetland is surrounded by a buffer of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland.
1b. Yes No	There is a significant of microtopography or vegetative density within the wetland to reduce the velocity of water leaving the wetland.
2. Yes No	The wetland lacks man-made structures that would speed the flow of water from the wetland

The flood potential of the local watershed in which the wetland is located is high (history of flood

The wetland is located in a watershed in which the majority of the upland soils are clayey and

The wetland is located in a watershed in which there are highly modified conditions due to existing development. (e.g. >5% of area is row crop, commercial, or residential use)

impermeable, or bedrock is within two feet of the top of the soil profile.

(eg. tiles, culverts, ditches).

damages).

3. Yes No

5. VI Yes No

Mo 💢

NWI Polygon ID #:	Project #:
Tier 3b Individual Polygon: Rapid Vegetation Desc	cription
3b.1 Zoning and Interspersion:	
1. How many vegetation zones are evident in this wetland polygon	on? \
1b. If only one vegetation zone is evident, we	which best describes the site?
tussocks; heterogeneous tex	aic of small vegetation patches, hummocks, or tures across the polygon le vegetation type with more or less uniform texture
2. If more than one vegetation zone is present in the polygon, who distribution of these zones?	nich interspersion diagram most closely represents
☐ Type One Interspersion	☐ Type Two Interspersion
3b.2 Dominant Plant Species: Vegetation Zone A	Observation Point #1
	Roll/Photo number(s):(Note: V-mark location on the polygon)
What percentage of the polygon does this vegetation zone occur	py?
10-25%	>90%
Is there notable layering/stratification in this vegetation zone?	Yes No
Dominant Herbaceous Species (ie. Covering more than 10% of with an "*" any species that form extensive monocultural patches	the area) listed in order of relative abundance (Mark s):
a	e
b	fg
Darrie and Charles Constitution	h
Dominant Shrub Species listed in order of relative abundance:	
a <u> </u>	cd
Dominant Tree Species listed in order of relative abundance: P=	
a γ/ Δ b	cd
Tree and Shrub Canopy:	
nil separate, seldom touching	often touching more or less closed
Mature trees (>12" dbh) present: ☐ Yes ☐ No	
Other remarks (include personal comments about what adds to	or detracts from the quality of this wetland site)

•

....

NWI Polygon ID #:		Project #:	
3b.2 Dominant Pl	ant Species: Vegetation Zone B	Observation Point #1	MO3014
		Roll/Photo number(s):	
Albet persentage o	f the polygon does this vegetation were equival	(Note: V-mark location on	the polygon)
	f the polygon does this vegetation zone occupy	_	
10-25%		>90% 	
-	ering/stratification in this vegetation zone?	Yes No	ab
	cies that form extensive monocultural patches):	a area) listed in order of relative	abundance (Mai
	a	е	
	ab	e f	
	c	f g h	-
Dominant Shrub S	pecies listed in order of relative abundance:		
	а	С	
•	a b	cd	
Dominant Tree Spo	ecies listed in order of relative abundance: P=po	ole (3-12" dbh) and M=mature (>	·12" dbh)
	ab	cd	
	0	d	
Tree and Shrub Ca			
☐ nil Mature trees (>12"	anopy: Separate, seldom touching	- <u>-</u> .	more or less closed
☐ nil Mature trees (>12"	anopy:		·
☐ nil Mature trees (>12" Other remarks (in	anopy:		·
☐ nil Mature trees (>12" Other remarks (in	anopy: separate, seldom touching dbh) present: Yes No clude personal comments about what adds to or	Observation Point #1	wetland site)
nii Mature trees (>12" Other remarks (in 3b.2 Dominant P	anopy: separate, seldom touching dbh) present: Yes No clude personal comments about what adds to or	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on	wetland site)
nii Mature trees (>12" Other remarks (in 3b.2 Dominant P	separate, seldom touching dbh) present: Yes No clude personal comments about what adds to or lant Species: Vegetation Zone C	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on	wetland site)
nil Mature trees (>12" Other remarks (in 3b.2 Dominant P What percentage of	separate, seldom touching dbh) present: Yes No clude personal comments about what adds to or lant Species: Vegetation Zone C of the polygon does this vegetation zone occupy 25-50% 50-75% 75-90%	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on?	wetland site)
nil Mature trees (>12" Other remarks (in 3b.2 Dominant P What percentage of 10-25% Is there notable lage	separate, seldom touching dobh) present: Yes No clude personal comments about what adds to or lant Species: Vegetation Zone C of the polygon does this vegetation zone occupy 25-50% 50-75% 75-90% yering/stratification in this vegetation zone?	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on?	the polygon)
nii Mature trees (>12" Other remarks (in 3b.2 Dominant P What percentage of 10-25% Is there notable lay Dominant Herbace	separate, seldom touching dbh) present: Yes No clude personal comments about what adds to or lant Species: Vegetation Zone C of the polygon does this vegetation zone occupy 25-50% 50-75% 75-90%	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on? >90% Yes No ne area) listed in order of relative	the polygon)
nii Mature trees (>12" Other remarks (in 3b.2 Dominant P What percentage of 10-25% Is there notable lay Dominant Herbace	separate, seldom touching dobh) present: Yes No clude personal comments about what adds to or lant Species: Vegetation Zone C of the polygon does this vegetation zone occupy 25-50% 50-75% 75-90% yering/stratification in this vegetation zone? eous Species (ie. Covering more than 10% of the cies that form extensive monocultural patches):	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on? >90% Yes No ne area) listed in order of relative	the polygon)
nii Mature trees (>12" Other remarks (in 3b.2 Dominant P What percentage of 10-25% Is there notable lay Dominant Herbace	separate, seldom touching dobh) present: Yes No clude personal comments about what adds to or lant Species: Vegetation Zone C of the polygon does this vegetation zone occupy 25-50% 50-75% 75-90% yering/stratification in this vegetation zone? eous Species (ie. Covering more than 10% of the cies that form extensive monocultural patches):	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on? >90% Yes No ne area) listed in order of relative	the polygon)
nii Mature trees (>12" Other remarks (in 3b.2 Dominant P What percentage of 10-25% Is there notable lay Dominant Herbace	separate, seldom touching dbh) present: Yes No clude personal comments about what adds to or lant Species: Vegetation Zone C of the polygon does this vegetation zone occupy 25-50% 50-75% yering/stratification in this vegetation zone? eous Species (ie. Covering more than 10% of the	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on? >90% Yes No ne area) listed in order of relative	the polygon)
nii Mature trees (>12" Other remarks (in 3b.2 Dominant P What percentage of 10-25% Is there notable lay Dominant Herback with an "*" any specific process.	separate, seldom touching dobh) present: Yes No clude personal comments about what adds to or lant Species: Vegetation Zone C of the polygon does this vegetation zone occupy 25-50% 50-75% 75-90% yering/stratification in this vegetation zone? eous Species (ie. Covering more than 10% of the cies that form extensive monocultural patches):	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on? >90% Yes No ne area) listed in order of relative	the polygon)
nii Mature trees (>12" Other remarks (in 3b.2 Dominant P What percentage of 10-25% Is there notable lay Dominant Herback with an "*" any specific process.	separate, seldom touching dbh) present: Yes No clude personal comments about what adds to or lant Species: Vegetation Zone C of the polygon does this vegetation zone occupy 25-50% 50-75% 75-90% evering/stratification in this vegetation zone? eous Species (ie. Covering more than 10% of the cies that form extensive monocultural patches): a b c d Species listed in order of relative abundance:	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on Page 1 No Page 2 No Page 3 No Page 3 No Page 4 Page	the polygon)
nii Mature trees (>12" Other remarks (in 3b.2 Dominant P What percentage of 10-25% Is there notable lay Dominant Herback with an "*" any specific process.	separate, seldom touching dobh) present:	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on? >90% Yes No ne area) listed in order of relative	the polygon)
Inii Mature trees (>12" Other remarks (in 3b.2 Dominant P What percentage of 10-25% Is there notable lay Dominant Herbac with an "*" any specific property of the second	separate, seldom touching dbh) present: Yes No clude personal comments about what adds to or lant Species: Vegetation Zone C of the polygon does this vegetation zone occupy 25-50% 50-75% 75-90% evering/stratification in this vegetation zone? eous Species (ie. Covering more than 10% of the cies that form extensive monocultural patches): a b c d Species listed in order of relative abundance:	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on? >90% Yes	the polygon)
Inii Mature trees (>12" Other remarks (in 3b.2 Dominant P What percentage of 10-25% Is there notable lay Dominant Herbac with an "*" any specific property of the second	separate, seldom touching dbh) present: Yes No clude personal comments about what adds to or lant Species: Vegetation Zone C of the polygon does this vegetation zone occupy 25-50% 50-75% 75-90% yering/stratification in this vegetation zone? eous Species (ie. Covering more than 10% of the cies that form extensive monocultural patches): a b c d Species listed in order of relative abundance: a b C	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on? >90% Yes	the polygon) e abundance (Ma

NWI Polygon ID #:				Project #:			
3b.2 Dominant Pla	ınt Species:	Vegetation Zone	C (cont'd)		_		
Tree and Shrub Car	пору:						
nil		separate, seldom touch	aing []	often touching	more or less closed		
Mature trees (>12"	dbh) present:	Yes 🔲	No		5		
Other remarks (inc		comments about v		detracts from the q	uality of this wetland site)		
3b.2 Dominant Pla				Observation	Point #1		
				Roll/Photo nur	mber(s):		
What percentage of	the polygon o	loes this vegetation	n zone occupy?	(Note: V-mark	location on the polygon)		
10-25%	25-50%	50-75	75-90%	☐ >90%			
is there notable laye	ering/stratifical	tion in this vegetation	on zone?	Yes] No		
Dominant Herbaced with an "*" any spec	ous Species (i ies that form e	ie. Covering more textensive monocult	than 10% of the tural patches):	area) listed in orde	er of relative abundance (Mark		
	a		•	е			
	b		.	f			
	d			h			
Dominant Shrub Sp	ecies listed in	order of relative a	bundance:				
	a			С			
	b			d			
Dominant Tree Spe	cies listed in c	order of relative abo	undance: P=pole	e (3-12" dbh) and I	M=mature (>12" dbh)		
	a			c	·		
	b			d			
Tree and Shrub Car	пору:						
🗌 nil		separate, seldom touch	ning 🔲	often touching	more or less closed		
Mature trees (>12"	dbh) present:	☐ Yes ☐	No				
Other remarks (inc	lude personal	comments about v	what adds to or o	detracts from the q	uality of this wetland site)		

Sec1-w18				
Common Name	Botanical Name	Indicator	FQA	notes
scarlet loosestrife	Ammania robusta	FACW	2	-
field bindweed	Convolvulus arvensis	UPL	0	exotic/uplan
conyza canadensis	Conyza canadensis	FAC-	0	upland
hairy crab grass	Digitaria sanguinalis	FACU	0	exotic/uplane
barnyard grass	Echinochloa crusgalli	FACW	0	exotic
yerba de tajo	Eclipta prostrata	FACW	3	
late boneset	Eupatorium serotinum	FAC+	0	
dwarf st. john's wort	Hypericum mutilum	FACW	4	
canadian rush	Juncus canadensis	OBL	7	
false loosestrife	Ludwegia polycarpa	OBL	4	
pennsylvania smartweed	Polygonum pensylvanicum	FACW+	0	
curly dock	Rumex crispus	FAC+	0	exotic
horse-nettle	Solanum carolinense	FACU-	0	upland
viscid field sow thistle	Sonchus arvensis	FAC-	0	exotic/uplan
total hydrophytic tava changed				
total hydrophytic taxa observed			9	
average of FQA (dominant wetland species only)			0	
number of indicator taxa			1	

I-69 Wetland Quality Assessment Profile

2/17/2006 Section1 **W19** 07/20/04 Date Report Generated:
Wetland site:
Data reference #
Date of site visit:
Total wetland area:

Wetland Impact #8

	0.19 acres
	~
	٠.
•	0

Polygon ID	0	
Polygon Size (acres)	0.190	
Wetland Community Type	WM	
Red Flag (Special) Indicators		
Special Hydrologic Conditions	Z	
Special Community Type	Z	
Rare-Threatened-Endangered Species	Z	
Animal Habitat Measures		
Wetland size and connectivity	2	
Surrounding land use	2	
Standing water	_	
Dead woody material	_	
Zonation and interspersion	က	
Stratification	-	
Tree canopy	-	
Mature trees		
Animal Habitat Measure Score (min = 8, max = 24,	12	
Animal Habitat Measure Rating	poor	
Botanical Measures (all except exotics dependent upon community type)	(a)	
Number of dominant plant taxa observed	_	
Conservatism rating	_	
Total hydrophytic taxa observed	•	
Number of indicator taxa	-	
Exotic species rating	2	
Botanical Measure Score (min = 5, max = 15)	မ	
Botanical Measure Rating	poor	
Hydrology Measures		
Water quality protection (= no. of yes answers)	4	
Flood and storm water storage (= no. of yes answers)	2	
Site/Hydrology Score (min = 11, max = 33)	23	
Site/Hydrology Rating	fair	

Tier 1: Assessment Overview

I.1 Site Identification: Project Site Name: Sec	1-w19			
Dwnership (if known):				
JSGS Topographic Quad	rangle(s): Fra i	ncisco		
JSGS Watershed 14-digit	:HUC: 051202	209080030		
dentify each National We	tland Inventory (NIMI) Polygon w	ithin the project site	(Polygon specific data
NWI Polygon ID #:		14VI) Folygon W	itilii tile project site	F (F Glygor)-specific data
Cowardin Classification:	PEM-			
Polygon Size (hectares):	1-B-n			
- Olygon Size (nectales).				
1.2 Site Visit: Feam Members: Sara 1	Tofari, Christi D	агсу		
Company/Agency: JFN e	ew			
Date Assessed: 7.20.20	104 Time: _	v	Veather Conditions:	Sunny, warm
Note any unusual weathe		•		tions within this wetland
1.3 Wetland Size: Size of site being assesse Size of total wetland comp	-	ous wetland poly	gons): 0.19 acres	<u> </u>
1.4 Site Setting: Degree of isolation from c	other wetland co	mplexes:		
☐ Site is	connected upst	ream and downs	stream with other we	etlands
☐ Site is	connected upst	ream with other	channels	
☐ Site is	connected dow	nstream with oth	er wetlands	
☐ Other	wetlands are wi	thin 0.25 mile bu	t not connected	
Site is	isolated			
General assessment of a site (indicate % abundance)			in 50 meters of the	perimeter of the wetlar
	Vegetation- wo		Abundance	e: 40
☐ Native	Vegetation- old	l field/scrub		
	ılture - tilled			20
	ılture- pasture			40
☐ Recre	ation- green spa	ice, mowed		
☐ Road/	Highway/Railroa	ad Bed/Parking L	.ot	,
☐ Indust	trial	_		
Resid	ential- single fan	nily		
☐ Comn	nercial or Multifa	mily Residential		

Permanently Flooded	NWI Polygon ID #:	Project #:
Depressional Gloodplain Lacustrine Calvert Lacustrine Calvert	Tier 2 Individual Polygon: Prelimina	ary Assessment (for each wetland polygon present on-site)
Road or Railroad Embankment Dams Ditching Ditching Ditching Ditching Ditching Dams Descriptions, and check one be Purple Loosestrife Culvert Cul	2.1 Wetland Geomorphic Setting and Surfa	ace Water Flow:
If yes, is the water greater than 2 meters in depth? Yes No	Riverine (within the river/s	
If yes, is the water greater than 2 meters in depth?	2.2 Presence of Standing Water:	
Is standing water normally present in an adjacent polygon?	s standing water normally present in the poly	gon?
2.3 Apparent Hydroperiod: Permanently Flooded Artificially Flooded Seasonally Flooded Artificially Drained Artificially Plooded Artificially Flooded Artificially Floode	If yes, is the water greater than	n 2 meters in depth?
Permanently Flooded	Is standing water normally pre	esent in an adjacent polygon? Yes No
Seasonally Flooded Artificially Drained Saturated (surface water seldom present) 2.4 Soil Type:	2.3 Apparent Hydroperiod:	
Organic (ie. Peat, etc.) Mineral Both Mineral and Organic Present	Seasonally Flooded	☐ Artificially Drained
Mineral Both Mineral and Organic Present	2.4 Soil Type:	
Ditching	Mineral	Present
Ditching	•	gon: (see Key to Wetland Communities of Indiana)
Tiles	2.6 Disturbances of Hydrology:	
Garlic Mustard Glossy Buckthorn Phragmites Reed Canary Grass Other List: echinochloa crusgalli (F) 2.8 Presence of Special Hydrologic Conditions: (ie. seeps, wet slopes, floating mats) NA 2.9 Presence of Special Community Types: Bog Fen Wet Sand/ Muck Flats or Marl Seeps Sinkhole pond or swamp 2.10 Presence of Known Federal or Indiana Rare, Threatened, or Endangered Species (RTES): RTES Present (list): RTES Present (list):	Tiles	CulvertOther Human Disturbances to the Hydrology
Phragmites	2.7 Presence of Invasive Exotic Vegetation	n: (Score as: S=Scattered, F=Frequent, or C=Common)
2.9 Presence of Special Community Types: Bog Fen Wet Sand/ Muck Flats or Marl Seeps Sinkhole pond or swamp 2.10 Presence of Known Federal or Indiana Rare, Threatened, or Endangered Species (RTES): None Observed or Known To Be Present: RTES Present (list): 2.11 Wetland Polygon Quality Descriptor: (see Wetland Quality Descriptions, and check one below the second secon	Phragmites	☐ Reed Canary Grass☑ Other
 Bog ☐ Fen ☐ Wet Sand/ Muck Flats or Marl Seeps ☐ Sinkhole pond or swamp 2.10 Presence of Known Federal or Indiana Rare, Threatened, or Endangered Species (RTES): ☐ None Observed or Known To Be Present: ☐ RTES Present (list): ☐ RTES Present (list): ☐ Wetland Polygon Quality Descriptor: (see Wetland Quality Descriptions, and check one below the state of the stat	2.8 Presence of Special Hydrologic Condi	itions: (ie. seeps, wet slopes, floating mats)
 Bog ☐ Fen ☐ Wet Sand/ Muck Flats or Marl Seeps ☐ Sinkhole pond or swamp 2.10 Presence of Known Federal or Indiana Rare, Threatened, or Endangered Species (RTES): ☐ None Observed or Known To Be Present: ☐ RTES Present (list): ☐ RTES Present (list): ☐ Wetland Polygon Quality Descriptor: (see Wetland Quality Descriptions, and check one below the state of the stat	2.9 Presence of Special Community Types	S:
None Observed or Known To Be Present: RTES Present (list): 2.11 Wetland Polygon Quality Descriptor: (see Wetland Quality Descriptions, and check one be	•	
2.11 Wetland Polygon Quality Descriptor: (see Wetland Quality Descriptions, and check one be	2.10 Presence of Known Federal or India	na Rare, Threatened, or Endangered Species (RTES):
	☑ None Observed or Knowr☐ RTES Present (list):	n To Be Present:
	2.11 Wetland Polygon Quality Descriptor	: (see Wetland Quality Descriptions, and check one be

Ti	. On India	de al Da	hann na Doniel I hadro lo ma la dio store
Her	' 3a indiv	iduai Po	lygon: Rapid Hydrology Indicators
3a.1	Notable I	Features T	hat Influence Water Quality and Hydrology:
Estim	nate Herba	ceous Plar	nt Cover (%) in the Polygon: \square 100-75 $\ igotimes$ 75-50 $\ \Box$ 50-25 $\ \Box$ <2
Estim	nated Woo	dy Plant Fo	oliar Coverage in the Polygon: \square 100-75 $\ \square$ 75-50 $\ \square$ 50-25 $\ \boxtimes$ <2
Amo	unt of Dead	d Woody M	laterial on the Soil Surface:
	⊠ Nil (<:	5% cover)	☐ Scattered (5-15% cover) ☐ Frequent (>20% cover)
3a.2	Water Qu	ality Prot	ection Questions:
1.	⊠ Yes	□ No	The wetland has a significant amount of vegetative (specifically herbaceous and wood plants) density to potentially uptake dissolved nutrients.
2.	⊠ Yes	☐ No	Managed Water (eg. Municipal or storm water drainage, agricultura drainage outlet, industrial or municipal wastewater) is not discharged into the wetland polygon.
If the	wetland in	question i	is a depressional wetland, respond to questions 3a. If not, answer 3b.
3a.	⊠ Yes	☐ No	The wetland has a shape or flow that allows for the settling out of suspended materials before the water reaches the center of the wetland.
3b.	☐ Yes	☐ No	The position of the wetland in the landscape is such that run-off is held or filtered before entering a surface body of water down-gradient
4.	☐ Yes	⊠ No	Within 100 meters of its borders, the wetland lacks steep slopes large impervious areas, moderate slopes with row cropping, or areas of severe overgrazing.
5.	☐ Yes	⊠ No	There are recreational lakes, fishable or navigable watercourses, owater supply sources down-gradient in the local watershed.
6.	⊠ Yes	□ No	There is a vegetative buffer area (>15 meters wide), or anothe wetland polygon (areas where overland flow can be filtered) located upland and adjacent to the wetland polygon. If yes, describe the buffer area width and slope:
			Ave. buffer width (meters): >15 m Approx. slope (%): 3%
3a.2	Water Q	uality Prot	ection Questions:
		•	is a depressional wetland, answer 1a. If not, answer 1b.
1a.		☐ No	The wetland is surrounded by a buffer of natural vegetation (forested old field, scrub) that will slow overland flow into the wetland.
1b.	☐ Yes	☐ No	There is a significant of microtopography or vegetative density within the wetland to reduce the velocity of water leaving the wetland.
2.	☐ Yes	⊠ No	The wetland lacks man-made structures that would speed the flow owater from the wetland (eg. Tiles, culverts, ditches).
3.	☐ Yes	⊠ No	The flood potential of the local watershed in which the wetland i located is high (history of flood damages).
4.	☐ Yes	⊠ No	The wetland is located in a watershed in which the majority of the upland soils are clayey and impermeable, or bedrock is within two feet of the top of the soil profile.
5.	⊠ Yes	☐ No	The wetland is located in a watershed in which there are highl modified conditions due to existing development. (e.g. >5% of area i row crop, commercial, or residential use).

NWI Polygon ID #:	Project #: 030730/00
Tier 3b Individual Polygon: Rapid Vegetation	Description
3b.1 Zoning and Interspersion:1. How many vegetation zones are evident in this wetland	polygon? 1
1b. If only one vegetation zone is evident, which be	st describes the site?
Polygon composed of a mosaic of or tussocks; heterogeneous texture	
 Polygon composed of a single veg texture across the polygon 	etation type with more or less uniform
2. If more than one vegetation zone is present in the polyclosely represents the distribution of these zones?	gon, which interspersion diagram most
☐ Type One Interspersion 🗵	Type Two Interspersion
3b.2 Dominant Plant Species: Vegetation Zone A	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the polygon)
What percentage of the polygon does this vegetation zone	occupy?
☐ 10-25% ☐ 25-50% ☐ 50-75%	☐ 75-90% ○ >90%
Is there notable layering/stratification in this vegetation zon	e? 🗌 Yes 🛛 No
Dominant Herbaceous Species listed in order of relative a that form extensive monocultural patches (ie. Covering more the	
a <i>Echniochloa crusgalli</i> e	
b Eleocharis obtusa f c Polygonum pensylvanicum g	
d <i>Polygonum lapathifolium</i> h	
Dominant Shrub Species listed in order of relative abunda	nce:
a c	
a c d	
Dominant Tree Species listed in order of relative abundance	ce: P=pole (3-12" dbh) and M=mature (>12" dbh)
a c d	· · · · · · · · · · · · · · · · · · ·
b d	
Tree and Shrub Canopy:	
☐ nil ☐ separate, seldom touching ☐	often touching more or less
Mature trees (>12" dbh) present: ☐ Yes ☒ No	
Other remarks (include personal comments about what a wetland site):	dds to or detracts from the quality of this

Sec1-w19			_	
Common Name	Botanical Name	Indicator	FQA	notes
barnyard grass	Echinchloa crusgalli	FACW	0	exotic
blunt spikerush	Eleocharis obtusa	OBL	1	dominant
Pennsylvania smartweed	Polygonum pensylvanicum	FACW+	0	
willow-weed	Polygonum lapathifolium	FACW+	0	
total hydrophytic taxa observed			4	
average of FQA (dominant wetland species only)			0.25	
number of indicator taxa			0	

I-69 Wetland Quality Assessment Profile

2/17/2006 Section 1 **W24** Date Report Generated:
Wetland site:
Data reference #
Date of site visit:
Total wetland area:

Wetland Impact #9

0.387 acres

08/25/05	0 207 0 0 00
õ	•

Polygon Information		
GI nogylod	0	
Polygon Size (acres)	0.190	
Wetland Community Type	SM	
Red Flag (Special) Indicators		
Special Hydrologic Conditions	Z	
Special Community Type	z	
Rare-Threatened-Endangered Species	Z	
Animal Habitat Measures		
Wetland size and connectivity	က	
Surrounding land use	က	
Standing water	2	
Dead woody material	-	
Zonation and interspersion	က	
Stratification	-	
Tree canopy	_	
Mature trees	-	
Animal Habitat Measure Score (min = 8, max = 24,	15	
Animal Habitat Measure Rating	fair	
Botanical Measures (all except exotics dependent upon community type)		
Number of dominant plant taxa observed	_	
Conservatism rating	-	
Total hydrophytic taxa observed	2	
Number of indicator taxa	-	
Exotic species rating	2	
Botanical Measure Score (min = 5, max = 15)	7	
Botanical Measure Rating	poor	
Hydrology Measures		
Water quality protection (= no. of yes answers)	വ	
Flood and storm water storage (= no. of yes answers)	-	
Site/Hydrology Score (min = 11, max = 33)	23	
Site/Hydrology Rating	fair	

In-WRAP Summary Sheet

Date Report Generated: 8-30-05
Wetland site name: Sec - w24 Data Reference #
Date of Site Visit: 8-25-05
NWI polygons in Site (quadrangle and NWI id. numbers):
TIER 1 SUMMARY:
a. Total wetland area (hectares): 0.0121 hectares (0.03 ares)
b. Wetland size and connectivity - contribution to animal habitat:
💆 Valuable 🛘 More Favorable 🗘 Favorable 🗘 Neutral
c. Surrounding land use - numerical rank (max. = 1): 0.82
d. Value surrounding area adds to animal habitat:
TIER 2 SUMMARY NWI Polygon Id
a. Indiana Wetland community type:
b. Standing water - contribution to animal habitat: Valuable Favorable Neutral
c. Disturbances to site: <u>difching</u>
d. Exotic species rating: ☐ Good ØMedium ☐ Poor
e. Special Hydrologic Conditions Observed:
f. Special Community Type:
g. Rare-Threatened-Endangered Species:
h. Polygon QualityDescriptor: □ Good Medium □Poor
TIER 3A SUMMARY
a. Dead woody material as indicator of animal habitat: □ Valuable □ Favorable 💆 Neutral
b. Water quality protection - numerical rank (6 max.): _5 Rating: \(\mathbb{Z}\)Good \(\summa\)Medium \(\summa\)Poor
c. Flood and storm water storage - numerical rank (5 max.): Rating: □Good □Medium XIPoor
TIER 3B SUMMARY
a. Zonation and interspersion as indicator of animal habitat: ☐ Valuable ☐ Favorable ☐ Neutral
b. Stratification as indicator of animal habitat: Valuable Neutral
c. Number of dominant plant taxa observed: 2 Rating: ☐ Good ☐ Medium 💢 Poor
d Average coefficient of appropriation 1 6
e. Tree canopy as indicator of animal habitat: □ Valuable Valuable
f. Mature trees as indicator of animal habitat: □ Valuable □ Favorable Neutral
g. Total hydrophytic taxa observed: <u>\\(\beta\)</u> Rating: □ Good \(\beta\)Medium □ Poor
h. Number of indicator taxa: Rating: □ Good □ Medium Poor

Indiana Wetland Routine Assessment Protocol

Tier 1: Assessment Overview 1.1 Site Identification: Project Site Name: Ownership (if known): USGS Topgraphic Quadrangle(s): Francisco USGS Watershed 14-digit HUC: 6612 02 09 08 Identify each National Wetland Inventory (NWI) Polygon within the project site (Polygon-specific data) NWI Polygon ID# Cowardin Classification POW-H-n Polygon Size (hectares) 1.2 Site Visit: Team Members: Company/Agency: Date Assessed: 30M Weather Conditions: NOT SUMM Time: Note any unusual weather events that may have influenced the current conditions within this wetland system (e.g. recent heavy rains, an unusually dry season, an especially early spring, etc.): 1.3 Wetland Size: Size of site being assessed: 0.0121 hertaxes= 0.03 100 Size of total wetland complex (all contiguous wetland polygons): 1.4 Site Setting: Degree of isolation from other wetland complexes: Site is connected upstream and downstream with other wetlands Site is connected upstream with other channels ☐ Site is connected downstream with other wetlands Other wetlands are within 0.25 mile but not connected ☐ Site is isolated General assessment of adjacent land use/land cover within 50 meters of the perimeter of the wetland site (indicate % abundance of each type): 0.1+ 8.72= 1.82 X Native Vegetation- woodland Abundance: M Native Vegetation- old field/scrub ☐ Agriculture - tilled ☐ Agriculture- pasture Recreation- green space, mowed ☐ Road/Highway/Railroad Bed/Parking Lot ☐ Industrial Residential- single family ☐ Commercial or Multifamily Residential 1

Project #: (1307) 30

NWI Polygon ID #:	Project #:
Tier 2 Individual Polygon: Preliminary Assess	
2.1 Wetland Geomorphic Setting and Surface Water FI	ow:
☐ Depressional☐ Riverine (within the river/stream ba☐ Slope	Floodplain
2.2 Presence of Standing Water:	
Is standing water normally present in the polygon?	☑ Yes ☐ No
If yes, is the water greater than 2 mete	ers in depth?
Is standing water normally present in a	, -
2.3 Apparent Hydroperiod:	7-
Permanently Flooded Seasonally Flooded Saturated (surface water seldom pr	Artificially Flooded Artificially Drained resent)
2.4 Soil Type:	
☐, Organic (ie. Peat, etc.)☒ Mineral☐ Both Mineral and Organic Present	
2.5 Wetland Community Type for this polygon (See Key	y to Wetland Communities of Indiana):
2.6 Disturbances of Hydrology: None	
☑ Ditching☐ Tiles☐ Dams	Road or Railroad Embankment Culvert Other Human Disturbances to the Hydrology Describe:
2.7 Presence of Invasice Exotic Vegetation:	
·	Glossy Buckthorn Reed Canary Grass Other all Scattered List: see allocared 154
2.8 Presence of Special Hydrologic Conditions (ie. see	ps, wet slopes, floating mats):
n/a	
2.9 Presence of Special Community Types: None	
☐ Bog ☐ Fen ☐ Wet Sand/ Muck Flats o	or Marl Seeps
2.10 Presence of Known Federal or Indiana Rare, Threa	
None Observed or Known To Be Pr	
2.11 Wetland Polygon Quality Descriptor (see Wetland	Quality Descriptions, and check one below):
☐ Good	Poor
	2

NWI Polygon ID #:	Project #: <u>03/7730 /66</u>
Tier 3a Individe	ual Polygon: Rapid Hydrology Indicators
3a.1 Notable Feat	tures That Influence Water Quality and Hydrology:
Estimated Woody I	Plant Cover (%) in the Polygon:
١	(<5% cover) Scattered (5-15% cover) Frequent (>20% cover)
`	y Protection Questions:
1. Yes No	The wetland has a significant amount of vegetative (specifically herbaceous and wood plants) density to potentially uptake dissolved nutrients.
2. Yes 🗋 No	Managed Water (eg. Municipal or storm water drainage, agricultural drainage outlet, industrial or municipal wastewater) is not discharged into the wetland polygon.
If the wetland in qu 3a. Yes No	estion is a depressional wetland, respond to questions 3a. If not, answer 3b. The wetland has a shape or flow that allows for the settling out of suspended materials before the water reaches the center of the wetland.
3b. ✓ Yes	The position of the wetland in the landscape is such that run-off is held or filtered before entering a surface body of water down-gradient.
4. Yes No	Within 100 meters of its borders, the wetland <i>lacks</i> steep slopes, large impervious areas, moderate slopes with row cropping, or areas of severe overgrazing.
5. Yes □(No	There are recreational lakes, fishable or navigable watercourses, or water supply sources downgradient in the local watershed.
6. Yes No	There is a vegetative buffer area (>15 meters wide), of another wetland polygon (areas where overland flow can be filtered) located upland and adjacent to the wetland polygon. If yes, describe the buffer area width and slope:
	Ave. buffer width (meters): Approx. slope (%): < 50%
3a.2 Water Qualit	ty Protection Questions:
If the wetland in qu 1a. Yes No	restion is a depressional wetland, answer 1a. If not, answer 1b. The wetland is surrounded by a buffer of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland.
1b. ☐ Yes 🛱 No	There is a significant of microtopography or vegetative density within the wetland to reduce the velocity of water leaving the wetland.
2. Yes No	The wetland <i>lacks</i> man-made structures that would speed the flow of water from the wetland (eg. tiles, culverts, ditches).
3. ☐ Yes [汉] No	The flood potential of the local watershed in which the wetland is located is high (history of flood damages).
4. Yes 📈 No	The wetland is located in a watershed in which the majority of the upland soils are clayey and impermeable, or bedrock is within two feet of the top of the soil profile.
5. Yes No	The wetland is located in a watershed in which there are highly modified conditions due to existing development. (e.g. >5% of area is row crop, commercial, or residential use)

NWI Polygon ID #:	Project #:
Tier 3b Individual Polygon: Rapid Vegetation Desc	ription
3b.1 Zoning and Interspersion:	
1. How many vegetation zones are evident in this wetland polygo	n?
1b. If only one vegetation zone is evident, w	hich best describes the site?
1 tussocks; heterogeneous text	aic of small vegetation patches, hummocks, or cures across the polygon e vegetation type with more or less uniform texture
2. If more than one vegetation zone is present in the polygon, wh the distribution of these zones?	ich interspersion diagram most closely represents
Type One Interspersion	☐ Type Two Interspersion
3b.2 Dominant Plant Species: Vegetation Zone A	Observation Point #1
	Roll/Photo number(s): (Note: V-mark location on the polygon)
What percentage of the polygon does this vegetation zone occup	, , , ,
10-25%	>90%
s there notable layering/stratification in this vegetation zone?	Yes 🛣 No
Dominant Herbaceous Species (ie. Covering more than 10% of t with an "*" any species that form extensive monocultural patches	the area) listed in order of relative abundance (Made
a juncus effusus b rehinochlora	e f g h
Dominant Shrub Species listed in order of relative abundance:	
a	d
Dominant Tree Species listed in order of relative abundance: P=p	
a	cd
Tree and Shrub Canopy:	
nil separate, seldom touching	often touching more or less closed
Mature trees (>12" dbh) present:	
Other remarks (include personal comments about what adds to a man made pand w/wottand	or detracts from the quality of this wetland site)

. Giptonia

A continue

CARSON

100 CM

o

AVVI Polygon ID #.	Project #: <u>036736 /60</u>
Bb.2 Dominant Plant Species: Vegetation Zone B	Observation Point #1
	Roll/Photo number(s):
What percentage of the polygon does this vegetation zone occup	(Note: V-mark location on the polygon)
	•
10-25%	>90%
s there notable layering/stratification in this vegetation zone? Dominant Herbaceous Species (ie. Covering more than 10% of t vith an "*" any species that form extensive monocultural patches	\square Yes \square No he area) listed in order of relative abundance (Mar):
a	e
b	f
a b c d	ef g h
Dominant Shrub Species listed in order of relative abundance:	
	C .
a b	c d
Dominant Tree Species listed in order of relative abundance: P=r	• • • • • • • • • • • • • • • • • • • •
ab	cd
Tree and Shrub Canopy:	
Tree and Shrub Canopy:	V often touching
_	often touching more or less closed or detracts from the quality of this wetland site)
☐ nil ☐ separate, seldom touching Mature trees (>12" dbh) present: ☐ Yes ☐ No Other remarks (include personal comments about what adds to	or detracts from the quality of this wetland site)
☐ nil ☐ separate, seldom touching Mature trees (>12" dbh) present: ☐ Yes ☐ No	or detracts from the quality of this wetland site) Observation Point #1
☐ nil ☐ separate, seldom touching Mature trees (>12" dbh) present: ☐ Yes ☐ No Other remarks (include personal comments about what adds to	or detracts from the quality of this wetland site) Observation Point #1 Roll/Photo number(s):
□ nil □ separate, seldom touching Mature trees (>12" dbh) present: □ Yes □ No Other remarks (include personal comments about what adds to 3b.2 Dominant Plant Species: Vegetation Zone C	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the polygon)
□ nil □ separate, seldom touching Mature trees (>12" dbh) present: □ Yes □ No Other remarks (include personal comments about what adds to Bb.2 Dominant Plant Species: Vegetation Zone C What percentage of the polygon does this vegetation zone occup	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the polygon)
☐ nil ☐ separate, seldom touching Mature trees (>12" dbh) present: ☐ Yes ☐ No Other remarks (include personal comments about what adds to get a separate) Bb.2 Dominant Plant Species: Vegetation Zone C What percentage of the polygon does this vegetation zone occup ☐ 10-25% ☐ 25-50% ☐ 50-75% ☐ 75-90%	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the polygon) >90%
nil	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the polygon) >90% Yes \[\] No
Inil	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the polygon) >90% Yes No the area) listed in order of relative abundance (Mai
nil	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the polygon) >90% >90% Yes
nil	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the polygon) >90% >90% Yes
nil	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the polygon) >90% >90% Yes
nil	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the polygon) >90% \[\text{Yes} \text{No} \] the area) listed in order of relative abundance (Ma)
Mature trees (>12" dbh) present:	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the polygon) >90% Yes
Mature trees (>12" dbh) present:	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the polygon) >90% Yes
Mature trees (>12" dbh) present:	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the polygon) >90% Yes
Mature trees (>12" dbh) present:	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the polygon) >90% >90% Yes

NWI Polygon ID #:	Project #:
3b.2 Dominant Plant Species: Vegetation Zone C (cont'd)	
Tree and Shrub Canopy:	
nil separate, seldom touching	often touching
Mature trees (>12" dbh) present: Yes No	5
Other remarks (include personal comments about what adds to comments about the comments are comments about the comments about the comments about the comments about the comments are comments are comments are comments.	r detracts from the quality of this wetland site)
3b.2 Dominant Plant Species: Vegetation Zone D	Observation Point #1
	Roll/Photo number(s):
What percentage of the polygon does this vegetation zone occupy	(Note: V-mark location on the polygon)
□ 10-25% □ 25-50% □ 50-75% □ 75-90%	
Is there notable layering/stratification in this vegetation zone?	Yes No
Dominant Herbaceous Species (ie. Covering more than 10% of the with an "*" any species that form extensive monocultural patches):	ne area) listed in order of relative abundance (Mark
a	e
a b	e
d	g h
Dominant Shrub Species listed in order of relative abundance:	
a	С
ab	cd
Dominant Tree Species listed in order of relative abundance: P=p	ole (3-12" dbh) and M=mature (>12" dbh)
ab	, c d
Tree and Shrub Canopy:	
inil separate, seldom touching	often touching more or less closed
Mature trees (>12" dbh) present: Yes No	often touching more or less dosed
Other remarks (include personal comments about what adds to o	r detracts from the quality of this wetland site)

- Control of the Cont

Section 20

Sec1-w24				
Common Name	Botanical Name	Indicator	FQA	notes
false-nettle	Boehmeria cylindrica	OBL	3	-
trumpet creeper	Campsis radican	FAC	1	
swamp oval sedge	Carex muskingumensis	OBL	2	
fox sedge	Carex vulpinoidea	OBL	7	
buttonbush	Cephalanthus occidentalis	OBL	5	
buttonbush	Cephalanthus occidentalis	OBL	5	
chufa	Cyperus esculentus	FACW	0	
barnyard grass	Echinochloa crusgalli	FACW	0	exotic/ dominant
yerba de tajo	Eclipta prostrata	FACW	3	
blunt spikerush	Eleocharis obtusa	OBL	1	
common boneset	Eupatorium perfoliatum	FACW+	4	
dwarf st. john's wort	Hypericum mutilum	FACW	4	
common rush	Juncus effusus	OBL	3	dominan
curly dock	Rumex crispus	FAC+	0	exotic
sandbar willow	Salix exigua	OBL	1	
yellow foxtail	Setaria faberi	FAC	0	exotic
blue vervain	Verbena hastata	FACW+	3	
total hydrophytic taxa observed			17	
average of FQA (dominant wetland species only)			1.5	
number of indicator taxa			1	1

1 d 1 d 1 d

I-69 Wetland Quality Assessment Profile

2/17/2006 Section 1 **W26** 08/25/05 Date Report Generated:
Wetland site:
Data reference #
Date of site visit:
Total wetland area:

Wetland Impact #10

0000	0.088 acres

	0	0.088	FF		z	z	Z		ო	က	-	~	ო	ო	-	1	16	fair	ty type)	-	-	2	-	3	80	poor		9	1	25	fair
Polygon Information	Polygon ID	Polygon Size (acres)	Wetland Community Type	Red Flag (Special) Indicators	Special Hydrologic Conditions	Special Community Type	Rare-Threatened-Endangered Species	Animal Habitat Measures	Wetland size and connectivity	Surrounding land use	Standing water	Dead woody material	Zonation and interspersion	Stratification	Tree canopy	Mature trees	Animal Habitat Measure Score (min = 8, max = 24,	Animal Habitat Measure Rating	Botanical Measures (all except exotics dependent upon community type)	Number of dominant plant taxa observed	Conservatism rating	Total hydrophytic taxa observed	Number of indicator taxa	Exotic species rating	Botanical Measure Score (min = 5, max = 15)	Botanical Measure Rating	Hydrology Measures	Water quality protection (= no. of yes answers)	Flood and storm water storage (= no. of yes answers)	Site/Hydrology Score (min = 11, max = 33)	Site/Hydrology Rating

In-WRAP Summary Sheet

Date Report Generated: 8-30-05
Wetland site name: Sec1-w24 Data Reference #
Date of Site Visit: 3-26-06
NWI polygons in Site (quadrangle and NWI id. numbers):
TIER 1 SUMMARY:
a. Total wetland area (hectares): 0.2347 hectares (0.58 acres)
b. Wetland size and connectivity - contribution to animal habitat:
√ Valuable □ More Favorable □ Favorable □ Neutral
c. Surrounding land use - numerical rank (max. = 1): 1.8
d. Value surrounding area adds to animal habitat: ☑ Valuable ☐ Favorable ☐ Low
TIER 2 SUMMARY NWI Polygon Id
a. Indiana Wetland community type:
b. Standing water - contribution to animal habitat: ☐ Valuable ☐ Favorable ☑ Neutral
c. Disturbances to site:
d. Exotic species rating: ☐ Good ☐ Medium ☐ Poor
e. Special Hydrologic Conditions Observed:
f. Special Community Type:
g. Rare-Threatened-Endangered Species:
h. Polygon QualityDescriptor: □ Good
TIER 3A SUMMARY
a. Dead woody material as indicator of animal habitat: □ Valuable □ Favorable 🖟 Neutral
b. Water quality protection - numerical rank (6 max.): ∠ Rating: \Good □Medium □P
c. Flood and storm water storage - numerical rank (5 max.): Rating: □Good □Medium 💢
TIER 3B SUMMARY
a. Zonation and interspersion as indicator of animal habitat: 및Valuable □ Favorable □ Ne
b. Stratification as indicator of animal habitat: ☆ Valuable □ Neutral
c. Number of dominant plant taxa observed: ☐ Rating: ☐ Good ☐ Medium ♀ Poor
d. Average coefficient of conservatism: 2.66 Rating: □ Good □ Medium Ø Poor
e. Tree canopy as indicator of animal habitat: □ Valuable ☑ Neutral
f Matura team as indicates of
a Total hadron hat had a least of the least
h. Number of indicator taxa: 2 Rating: 🛛 Good 🗎 Medium 🗡 Poor

Indiana Wetland Routine Assessment Protocol Project #: 03073 Tier 1: Assessment Overview 1.1 Site Identification: Project Site Name: Ownership (if known): USGS Topgraphic Quadrangle(s): Francisco USGS Watershed 14-digit HUC: 05 1262 69 08 10 30 Identify each National Wetland Inventory (NWI) Polygon within the project site (Polygon-specific data) NWI Polygon ID# Cowardin Classification DFO-1-C-N Polygon Size (hectares) 1.2 Site Visit: Team Members: Company/Agency: Time: 315 pm Date Assessed: Weather Conditions: ht supply 10 90's Note any unusual weather events that may have influenced the current conditions within this wetland system (e.g. recent heavy rains, an unusually dry season, an especially early spring, etc.): 1.3 Wetland Size: Size of site being assessed: 0.2347 hectares = 0.58 Size of total wetland complex (all contiguous wetland polygons): 1.4 Site Setting: Degree of isolation from other wetland complexes: 区 Site is connected upstream and downstream with other wetlands ☐ Site is connected upstream with other channels ☐ Site is connected downstream with other wetlands Other wetlands are within 0.25 mile but not connected ☐ Site is isolated General assessment of adjacent land use/land cover within 50 meters of the perimeter of the wetland site (indicate % abundance of each type): ☐ Native Vegetation- woodland Abundance: Mative Vegetation- old field/scrub 100 ☐ Agriculture - tilled ☐ Agriculture- pasture

☐ Recreation- green space, mowed

☐ Residential- single family

☐ Industrial

Road/Highway/Railroad Bed/Parking Lot

☐ Commercial or Multifamily Residential

NWI Polygon ID #:	Project #:
Tier 2 Individual Polygon: Preliminar	y Assessment (for each wetland polygon present on-site)
2.1 Wetland Geomorphic Setting and Surfac	
☐ Depressional ☐ Riverine (within the rivering Slope	Floodplain r/stream banks) Lacustrine
2.2 Presence of Standing Water:	
ls standing water normally present in the polygo	on? ☐ Yes 🏿 No
If yes, is the water greater t	than 2 meters in depth?
Is standing water normally	present in an adjacent polygon?
2.3 Apparent Hydroperiod:	
☐ Permanently Flooded ☐ Seasonally Flooded ☐ Saturated (surface wate	☐ Artificially Flooded ☐ Artificially Drained er seldom present)
2.4 Soil Type:	
☐ Organic (ie. Peat, etc.) ☑ Mineral ☐ Both Mineral and Organ	uic Present
2.5 Wetland Community Type for this polygo	on (See Key to Wetland Communities of Indiana):
Forested f	Roodsdain
2.6 Disturbances of Hydrology: No ne	
☐ Ditching ☐ Tiles ☐ Dams	 Road or Railroad Embankment Culvert Other Human Disturbances to the Hydrology Describe:
2.7 Presence of Invasice Exotic Vegetation:	
☐ Garlic Mustard ☐ Phragmites ☐ Purple Loosestrife	☐ Glossy Buckthorn ☐ Reed Canary Grass ☑ Other <i>Scattered</i> List: <u>See attached</u> ISL
2.8 Presence of Special Hydrologic Condition	
n/a	
2.9 Presence of Special Community Types:	None
☐ Bog ☐ Fen ☐ Wet Sand/ M	Muck Flats or Marl Seeps Sinkhole pond or swamp
2.10 Presence of Known Federal or Indiana	Rare, Threatened, or Endangered Species (RTES):
None Observed or Know RTES Present (list):	
2.11 Wetland Polygon Quality Descriptor (se	ee Wetland Quality Descriptions, and check one below):
<u> </u>	Medium Poor
	2

NWI Polyg	jon ID #:	Project #: <u>()36 320 /00</u>
Tier 3a l	ndivid	ual Polygon: Rapid Hydrology Indicators
3a.1 Nota	ble Fea	tures That Influence Water Quality and Hydrology:
Estimated	Woody I Dead W	Plant Cover (%) in the Polygon: \(\sigma' \) 100-75 \(\sigma \) 75-50 \(\sigma \) 50-25 \(\sigma \) <25 Plant Foliar Coverage in the Polygon \(\sigma \) 100-75 \(\sigma \) 75-50 \(\sigma \) 50-25 \(\sigma \) <25 Coody Material on the Soil Surface:
32 2 Wate	N N	! (<5% cover) ☐ Scattered (5-15% cover) ☐ Frequent (>20% cover) y Protection Questions:
1. Yes		The wetland has a significant amount of vegetative (specifically herbaceous and wood plants) density to potentially uptake dissolved nutrients.
2. XYes	No	
If the wetla 3a. ∐ _{Yes}	and in qu	estion is a depressional wetland, respond to questions 3a. If not, answer 3b. The wetland has a shape or flow that allows for the settling out of suspended materials before the water reaches the center of the wetland.
3b. 💢 Yes	☐ No	The position of the wetland in the landscape is such that run-off is held or filtered before entering a surface body of water down-gradient.
4. Yes	☐ No	Within 100 meters of its borders, the wetland <i>lacks</i> steep slopes, large impervious areas, moderate slopes with row cropping, or areas of severe overgrazing.
5. X Yes	☐ No	There are recreational lakes, fishable or navigable watercourses, or water supply sources downgradient in the local watershed.
6.) X/Yes	□ No	There is a vegetative buffer area (>15 meters wide), or another wetland polygon (areas where overland flow can be filtered) located upland and adjacent to the wetland polygon. If yes, describe the buffer area width and slope: () () () () () () () ()
		Ave. buffer width (meters): >100 M Approx. slope (%): 60%
3a.2 Wate	er Qualit	y Protection Questions:
If the wetla	nd in qu	estion is a depressional wetland, answer 1a. If not, answer 1b. The wetland is surrounded by a buffer of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland.
1b. Yes	No	There is a significant of microtopography or vegetative density within the wetland to reduce the velocity of water leaving the wetland.
2. ∐′Yes	No	The wetland <i>lacks</i> man-made structures that would speed the flow of water from the wetland (eg. tiles, culverts, ditches).
3. Yes	No	The flood potential of the local watershed in which the wetland is located is high (history of flood damages).
4.	•	The wetland is located in a watershed in which the majority of the upland soils are clayey and impermeable, or bedrock is within two feet of the top of the soil profile.
5. Yes	No	The wetland is located in a watershed in which there are highly modified conditions due to existing development. (e.g. >5% of area is row crop, commercial, or residential use)

NWI Polygon ID #:		Project #:	
Tier 3b Individual Polyg	on: Rapid Vegetation De	escription	
3b.1 Zoning and Interspersi	on:		
1. How many vegetation zones	s are evident in this wetland poly	ygon? \	
		it, which best describes the site?	-
	/ tussocks; heterogeneous	nosaic of small vegetation patches, hum textures across the polygon ingle vegetation type with more or less u	
If more than one vegetation the distribution of these zones	zone is present in the polygon,	which interspersion diagram most close	ely represents
☐ Type (One Interspersion	☐ Type Two Interspersion	
3b.2 Dominant Plant Specie	s: Vegetation Zone A	Observation Point #1	
		Roll/Photo number(s):(Note: V-mark location on the	e polygon)
What percentage of the polygo	on does this vegetation zone oc	cupy?	
10-25% 25-50%	50-75% 75-9	90% X >90%	
ls there notable layering/stratif	ication in this vegetation zone?	— ∑ Yes □ No	
Dominant Herbaceous Species with an "*" any species that for	es (ie. Covering more than 10% m extensive monocultural patch	of the area) listed in order of relative at	oundance (Mark
a <u>Solic</u> b <u>c</u> c fak d	lago canadonses	e	
Dominant Shrub Species liste	d in order of relative abundance	9 :	
av b)/a	cd	
		P=pole (3-12" dbh) and M=mature (>12	· · · · · · · · · · · · · · · · · · ·
	sarcharinum		
Tree and Shrub Canopy:			
inil	separate, seldom touching	often touching mo	re or less closed
Mature trees (>12" dbh) prese	□ 163 · Q(110		
Other remarks (include personal did) 14	that comments about what adds $EI = Syrpam brownian$	s to or detracts from the quality of this which \mathcal{A} within $watherd$	etland site)
- connection b	etween manmade	wetands	

NWI Polygon ID #:	Project #: <u>636736/6</u> 0
3b.2 Dominant Plant Species: Vegetation Zone B	Observation Point #1
	Roll/Photo number(s): (Note: V-mark location on the polygon)
What percentage of the polygon does this vegetation zone occupy?	(total v man todation on the polygon)
□ 10-25% □ 25-50% □ 50-75% □ 75-90%	>90%
Is there notable layering/stratification in this vegetation zone?	Yes No
Dominant Herbaceous Species (ie. Covering more than 10% of the with an "*" any species that form extensive monocultural patches):	area) listed in order of relative abundance (Mark
	e
a	f
cd	e f g h
Dominant Shrub Species listed in order of relative abundance:	
ab	c
	c
Dominant Tree Species listed in order of relative abundance: P=pole	e (3-12" dbh) and M=mature (>12" dbh)
a b	c d
Tree and Shrub Canopy:	
<u> </u>	_
☐ nil ☐ separate, seldom touching ☐ of the separate is separate. Seldom touching ☐ of the separate is separate. Seldom touching ☐ of the separate is separate, seldom touching ☐ of the separate is separate. Seldom touching ☐ of the seldom	often touching more or less closed
Other remarks (include personal comments about what adds to or d	detracts from the quality of this wetland site)
3b.2 Dominant Plant Species: Vegetation Zone C	Observation Point #1
	Roll/Photo number(s): (Note: V-mark location on the polygon)
What percentage of the polygon does this vegetation zone occupy?	(Note: V mark location on the polygon)
□ 10-25% □ 25-50% □ 50-75% □ 75-90%	
Is there notable layering/stratification in this vegetation zone?	Yes No
Dominant Herbaceous Species (ie. Covering more than 10% of the with an "*" any species that form extensive monocultural patches):	area) listed in order of relative abundance (Mark
	e
b	f
a b c d	ef
Dominant Shrub Species listed in order of relative abundance:	"
a	
a b	С
Dominant Tree Species listed in order of relative abundance: Denet	cd
politically abundance. Papolit	c d e (3-12" dbh) and M=mature (>12" dbh)
ab	

NWI Polygon ID #:	Project #:
3b.2 Dominant Plant Species: Vegetation Zone C (cont'd)	
Tree and Shrub Canopy:	_
	often touching more or less closed
Mature trees (>12" dbh) present: Yes No	
Other remarks (include personal comments about what adds to o	r detracts from the quality of this wetland site)
3b.2 Dominant Plant Species: Vegetation Zone D	Observation Point #1
	Roll/Photo number(s):
What percentage of the polygon does this vegetation zone occupy	(Note: V-mark location on the polygon)
☐ 10-25% ☐ 25-50% ☐ 50-75% ☐ 75-90%	
Is there notable layering/stratification in this vegetation zone?	☐ Yes ☐ No
Dominant Herbaceous Species (ie. Covering more than 10% of the with an "*" any species that form extensive monocultural patches):	ne area) listed in order of relative abundance (Mark
a	e
a b c d	e f g h
d	9 h
Dominant Shrub Species listed in order of relative abundance:	
а	c ·
ab	d
Dominant Tree Species listed in order of relative abundance: P=p	
a b	c
	0
Tree and Shrub Canopy:	
nil separate, seldom touching	often touching more or less dosed
Mature trees (>12" dbh) present: Yes No	
Other remarks (include personal comments about what adds to o	or detracts from the quality of this wetland site)

Section 25

Sec1-w26				
Common Name	Botanical Name	Indicator	FQA	notes
false-nettle	Boehmeria cylindrica	OBL	3	-
fescue oval sedge	Carex festucacea	FAC	2	
common hop sedge	Carex lupulina	OBL	7	
sedge	Carex sp.	FACW	7	dominant
common persimmons	Diospyros virginiana	FAC	2	
white avens	Geum canadense	FAC	1	
hypericum perfoliatum	Hypericum perfoliatum	UPL	0	exotic/upland
whitegrass	Leersia virginica	OBL	4	
sweet gum	Liquidambar styraciflua	FACW	4	
smartweed (formerly polygonom punctatum)	Persicaria punctata	OBL .	3	
reed canary grass	Phalaris arundinacea	FACW+	0	dominant/ exotic
dwarf sumac	Rhus copallina	UPL	3	upland
allegheny blackberry	Rubus allegheniensis	FACU+	2	
black willow	Salix nigra	OBL	3	
green bulrush	Scirpus atrovirens	OBL	4	
canada goldenrod	Solidago canadensis	FACU	0	dominant/ upland
·				
total hydrophytic taxa observed			13	
average of FQA (dominant wetland species only)			3.5	
number of indicator taxa			2	

•

•

I-69 Wetland Quality Assessment Profile

Wetland Impact #11 2/17/2006 Section 1 **W31** 08/25/05 Date Report Generated:
Wetland site:
Data reference #
Date of site visit:
Total wetland area:

,	acres
	3.846

ors ed Species ed Species ty ating ept exotics dependent upon community type) txa observed ved min = 5, max = 15,	Species	N N N N N N N N N N N N N N N N N N N
Species e (min = 8, max = 24, gg exotics dependent upon community type) observed 15	Species	N N N N N N N N N N N N N N N N N N N
Species e (min = 8, max = 24, gg exotics dependent upon community type) observed 15	Species	NN
Species e (min = 8, max = 24, gg exotics dependent upon community type) observed 15	Species	N
Species e (min = 8, max = 24, gg exotics dependent upon community type) observed 15	Species	ZZZ
Species e (min = 8, max = 24, gg exotics dependent upon community type) observed 1 5, max = 15,	Species	ZZZ
Species e (min = 8, max = 24, gg exotics dependent upon community type) observed 15	Species	Z Z 66 8 4 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
ommunity type)	Species	Z
ommunity type)	Animal Habitat Measures Wetland size and connectivity Surrounding land use Standing water Dead woody material Zonation and interspersion	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~
ommunity type)	Wetland size and connectivity Surrounding land use Standing water Dead woody material Zonation and interspersion	8 8 7 7 7 7 7 7
ommunity type)	Surrounding land use Standing water Dead woody material Zonation and interspersion Stratification	8 7 7 7 7 7 7
ommunity type)	Standing water Dead woody material Zonation and interspersion Stratification	2
ommunity type)	Dead woody material Zonation and interspersion Stratification	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
ommunity type)	Zonation and interspersion Stratification	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
ommunity type)	Stratification	
ommunity type)	7.000	
ommunity type)	liee callopy	
ommunity type)	Mature trees	
except exotics dependent upon community type) it taxa observed iserved iserved iserved iserved iserved	ı	44
except exotics dependent upon community type) it taxa observed served served served re (min = 5, max = 15)		air
it taxa observed iserved iserved iserved iserved iserved iserved	Botanical Measures (all except exotics dependent upon community type)	
	Number of dominant plant taxa observed	
iserved re (min = 5, max = 15)	Conservatism rating	-
re (min = 5, max = 15)	Total hydrophytic taxa observed	-
Score (min = 5, max = 15)	Number of indicator taxa	₹-
Score (min = 5, max = 15)	Exotic species rating	2
	Score (min = 5, max = 15)	ယ
	Botanical Measure Rating poor	Or
Hydrology Measures	Hydrology Measures	
Water quality protection (= no. of yes answers) 4		4
Flood and storm water storage (= no. of yes answers) 3		3
Site/Hydrology Score (min = 11, max = 33) 25		25
Site/Hydrology Rating		air

In-WRAP Summary Sheet

	of Site Visit: 8-25-05
iaaai t	polygons in Site (quadrangle and NWI id. numbers):
TIER	R 1 SUMMARY:
	a. Total wetland area (hectares): 1.7048 mechanes (1.89 acres)
	b. Wetland size and connectivity - contribution to animal habitat:
	ばValuable □ More Favorable □ Favorable □ Neutral
	c. Surrounding land use - numerical rank (max. = 1): ↑ →
•	d. Value surrounding area adds to animal habitat: X Valuable □ Favorable □ Low
TIER	R 2 SUMMARY NWI Polygon Id
	a. Indiana Wetland community type:

ndiana Wetland Routine	Assessment P	rotocol			Project #	: 03073	30/06
Tier 1: Assessment 1.1 Site Identification:	Overview						-W31
Project Site Name:	1-W31						•
Ownership (if known):							
JSGS Topgraphic Quadra	ngle(s):	W(</td <td></td> <td></td> <td>- · · · · · · · · · · · · · · · · · · ·</td> <td></td> <td></td>			- · · · · · · · · · · · · · · · · · · ·		
JSGS Watershed 14-digit	HUC: NO I	2020905	8 10 20	·			
•							
dentify each National Wet	and inventory (invvi) Polygon w	vitnin the pro	ject site (Poly	gon-specit	ic data)	
NWI Polygon ID#							
Cowardin Classification	POW-H-	n .					
Polygon Size (hectares)	0,76	48		<u> </u>			
I.2 Site Visit:							
							,
Team Members: <u>ビハ</u>	1C & MWI	\sim					
Company/Agency:	JEW)						
Date Assessed: <u>-6/1</u>	5-65 T	Time: 315	Weathe	er Conditions:	hot su	nnu la	W gos
Note any unusual weather recent heavy rains, an unu				· · · · · · · · · · · · · · · · · · ·		·	
		tle98 hecta	res = 1:8	89 acus			· · · · · · · · · · · · · · · · · · ·
recent heavy rains, an unu	d: <u>0.</u> -3	1698 hecta		89 acres			
recent heavy rains, an unu 1.3 Wetland Size: Size of site being assesse	d: <u>0.</u> -3			89 acus ——			
1.3 Wetland Size: Size of site being assesse Size of total wetland comp	d:	ous wetland poly		89 acres		· · · · · · · · · · · · · · · · · · ·	
1.3 Wetland Size: Size of site being assesse Size of total wetland comp	d:	ous wetland poly		89 acres ——		· · · · · · · · · · · · · · · · · · ·	
1.3 Wetland Size: Size of site being assesse Size of total wetland comp 1.4 Site Setting: Degree of isolation from o	d: <u>() i - 7</u> lex (all contiguon ther wetland contected is connected in the contected in the content	ous wetland poly mplexes: upstream and d	/gons): lownstream v	with other wet			
1.3 Wetland Size: Size of site being assesse Size of total wetland comp 1.4 Site Setting: Degree of isolation from o	d:	ous wetland poly mplexes: upstream and d upstream with o	gons): downstream v	with other wet		· · · · · · · · · · · · · · · · · · ·	
1.3 Wetland Size: Size of site being assesse Size of total wetland comp 1.4 Site Setting: Degree of isolation from o	d:	mplexes: upstream and d upstream with o downstream wit	gons): lownstream vother channe	with other wet ls ands			
1.3 Wetland Size: Size of site being assesse Size of total wetland comp 1.4 Site Setting: Degree of isolation from o	d: 0.7 lex (all contiguo ther wetland cor e is connected e is connected the is connected the is connected the is connected	ous wetland poly mplexes: upstream and d upstream with o	gons): lownstream vother channe	with other wet ls ands		· · · · · · · · · · · · · · · · · · ·	
1.3 Wetland Size: Size of site being assesse Size of total wetland comp 1.4 Site Setting: Degree of isolation from o	d:	mplexes: upstream and d upstream with o downstream wit	gons): lownstream vother channe	with other wet ls ands			
1.3 Wetland Size: Size of site being assesse Size of total wetland comp 1.4 Site Setting: Degree of isolation from o	d: 0.73 lex (all contiguo cher wetland core is connected to is connected the is connected the is connected the is connected the wetlands are is isolated	mplexes: upstream and d upstream with o downstream wit e within 0.25 mi	gons): lownstream vother channe th other wetta ile but not co	with other wet is ands nnected	lands		
1.3 Wetland Size: Size of site being assesse Size of total wetland composite 1.4 Site Setting: Degree of isolation from o	d:	mplexes: upstream and d upstream with o downstream wit e within 0.25 mi	gons): lownstream vother channe th other wetta ile but not co	with other wet is ands nnected s of the perime	lands eter of the		te (indicate % + 0,64 = 0,
1.3 Wetland Size: Size of site being assesse Size of total wetland composite 1.4 Site Setting: Degree of isolation from o	d: 0.73 lex (all contiguous cher wetland content e is connected to is connected the is connected ther wetlands and the is isolated beginning to be included the isolated beginning to be included the isolated beginning the isolated	mplexes: upstream and d upstream with o downstream wit e within 0.25 mi	gons): lownstream vother channe th other wetlatile but not co	with other wet is ands nnected	lands eter of the		
1.3 Wetland Size: Size of site being assesse Size of total wetland composite 1.4 Site Setting: Degree of isolation from o	d:	mplexes: upstream and d upstream with o downstream with re within 0.25 mi l/land cover with re woodland re old field/scrub	gons): lownstream vother channe th other wetlatile but not co	with other wet is ands nnected s of the perime	lands eter of the		
1.3 Wetland Size: Size of site being assesse Size of total wetland composite 1.4 Site Setting: Degree of isolation from o Si Si Si Si Si Na Ad Na	d:	mplexes: upstream and d upstream with o downstream wit e within 0.25 mi //land cover with	gons): lownstream vother channe th other wetlatile but not co	with other wet is ands nnected s of the perime	lands eter of the		
Action of each type):	d: 0.73 lex (all contiguous cher wetland cone is connected the is connected the is connected the is isolated lijacent land use the vegetation ative Vegetation priculture - tilled priculture - pastu	mplexes: upstream and d upstream with o downstream wit e within 0.25 mi //land cover with - woodland - old field/scrub	gons): downstream vother channe th other wetlatile but not co	with other wet is ands nnected s of the perime	lands eter of the		
1.3 Wetland Size: Size of site being assesse Size of total wetland composite 1.4 Site Setting: Degree of isolation from o Si Si Si Si Si Ai	d:	mplexes: upstream and d upstream with o downstream with e within 0.25 mi fland cover with woodland old field/scrub	lownstream vother channe th other wetlatile but not co	with other wet is ands nnected s of the perime	lands eter of the		
1.3 Wetland Size: Size of site being assesse Size of total wetland composite 1.4 Site Setting: Degree of isolation from o Si Si Si Si Si Reneral assessment of acabundance of each type): X Na X N	d:	mplexes: upstream and d upstream with o downstream wit e within 0.25 mi //land cover with - woodland - old field/scrub	lownstream vother channe th other wetlatile but not co	with other wet is ands nnected s of the perime	lands eter of the		
Action of each type):	d:	mplexes: upstream and d upstream with o downstream wit e within 0.25 mi l-woodland - old field/scrub are n space, mowed	lownstream vother channe th other wetlatile but not co	with other wet is ands nnected s of the perime	lands eter of the		
1.3 Wetland Size: Size of site being assesse Size of total wetland composite 1.4 Site Setting: Degree of isolation from o Si Si Si Si Si Si Reneral assessment of adabundance of each type): X Na X N	d:	mplexes: upstream and d upstream with o downstream wit e within 0.25 mi l-woodland - old field/scrub are n space, mowed	lownstream vother channe th other wetlatile but not comin 50 meters	with other wet is ands nnected s of the perime	lands eter of the		

N'	WI Polyg	on ID #:	Project #: <u>030730 /00</u>
Τ	ier 3a lı	ndivide	ıal Polygon: Rapid Hydrology Indicators
38	a.1 Notal	ble Feat	ures That Influence Water Quality and Hydrology:
E	stimated \	Woody f Dead W	us Plant Cover (%) in the Polygon: 100-75 75-50 50-25 < <25 Plant Foliar Coverage in the Polygon 100-75 75-50 50-25 \$\frac{1}{2}\times 25 cody Material on the Soil Surface: Frequent (>20% cover)
38	.2 Wate	,,	y Protection Questions:
1.	Yes	No	The wetland has a significant amount of vegetative (specifically herbaceous and wood plants) density to potentially uptake dissolved nutrients.
2.	Yes	☐ No	Managed Water (eg. Municipal or storm water drainage, agricultural drainage outlet, industrial or municipal wastewater) is not discharged into the wetland polygon.
If 3a	the wetla	nd in qu	estion is a depressional wetland, respond to questions 3a. If not, answer 3b. The wetland has a shape or flow that allows for the settling out of suspended materials before the water reaches the center of the wetland.
31). 📋 Yes	No	The position of the wetland in the landscape is such that run-off is held or filtered before entering a surface body of water down-gradient.
4.	Yes	No	Within 100 meters of its borders, the wetland <i>lacks</i> steep slopes, large impervious areas, moderate slopes with row cropping, or areas of severe overgrazing.
5.	Yes	⊠ No	There are recreational lakes, fishable or navigable watercourses, or water supply sources downgradient in the local watershed.
6.	Yes	No	There is a vegetative buffer area (>15 meters wide), or another wetland polygon (areas where overland flow can be filtered) located upland and adjacent to the wetland polygon. If yes, describe the buffer area width and slope: $\partial /\partial /\partial$
			Ave. buffer width (meters): \(\sum \) \(\sum \) \(\sum \) Approx. slope (%): \(\lambda \sum \)
3	a.2 Wate	r Qualit	y Protection Questions:
ļf 1a	the wetla	nd in qu	estion is a depressional wetland, answer 1a. If not, answer 1b. The wetland is surrounded by a buffer of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland.
. 11). XYes	No	There is a significant of microtopography or vegetative density within the wetland to reduce the velocity of water leaving the wetland.
2.	Yes	□ No	The wetland <i>lacks</i> man-made structures that would speed the flow of water from the wetland (eg. tiles, culverts, ditches).
. , 3.	Yes	⋈w	The flood potential of the local watershed in which the wetland is located is high (history of flood darnages).
4.	Yes	以 No	The wetland is located in a watershed in which the majority of the upland soils are clayey and impermeable, or bedrock is within two feet of the top of the soil profile.
5.	Yes	No	The wetland is located in a watershed in which there are highly modified conditions due to existing development. (e.g. >5% of area is row crop, commercial, or residential was)

NWI Polygon ID #:	1	Project #:
Tier 3b Individua	al Polygon: Rapid Vegetation Desc	ription
3b.1 Zoning and In	terspersion:	
1. How many vegeta	tion zones are evident in this wetland polygo	on? _ _
	1b. If only one vegetation zone is evident, w	hich best describes the site?
	tussocks; heterogeneous text	aic of small vegetation patches, hummocks, or tures across the polygon e vegetation type with more or less uniform texture
2. If more than one v	egetation zone is present in the polygon, where zones?	ich interspersion diagram most closely represents
ě	Type One Interspersion	☐ Type Two Interspersion
	AB	
3b.2 Dominant Plan	nt Species: Vegetation Zone A	Observation Point #1
		Roll/Photo number(s): (Note: V-mark location on the polygon)
What percentage of t	the polygon does this vegetation zone occup	
1 0-25%	25-50%	>90%
Is there notable layer	ing/stratification in this vegetation zone?	☐ Yes
Dominant Herbaceon with an "*" any species	us Species (ie. Covering more than 10% of the street of the street in the street is that form extensive monocultural patches	the area) listed in order of relative abundance (Mark
	a milfria	e
	b	f
	d	fgh
Dominant Shrub Spe	ecies listed in order of relative abundance:	
	a	c
Dominant Tree Speci	ies listed in order of relative abundance: P=p	Dole (3-12" dbb) and M-mature (>12" dbb)
	an/a	cd
Tree and Shrub Cand	рру:	
□ √nii	separate, seldom touching	often touching more or less dosed
Mature trees (>12" dt	_	
Other remarks (inclued)	/ \	or detracts from the quality of this wetland site)

· Second

CELL

NWI Polygon ID #:	Project #: <u>030730/06</u>
3b.2 Dominant Plant Species: Vegetation Zone B	Observation Point #1
	Roll/Photo number(s):
What percentage of the polygon does this vegetation zone occupy?	(Note: V-mark location on the polygon)
☐ 10-25% ☐ 25-50% ☐ 50-75% ☐ 75-90%	>90%
Is there notable layering/stratification in this vegetation zone?	☐ Yes No
Dominant Herbaceous Species (ie. Covering more than 10% of the arwith an "*" any species that form extensive monocultural patches):	
a ludweyin b c d	e
b	f
d	e
Dominant Shrub Species listed in order of relative abundance:	
a	cd
Dominant Tree Species listed in order of relative abundance: P=pole (
a h/A	·
a b	cd
Tree and Shrub Canopy:	
nil separate, seldom touching off	ten touching
Mature trees (>12" dbh) present: ☐ Yes 🏋 No	•
	etracts from the quality of this wetland site)
Other remarks (include personal comments about what adds to or de	etracts from the quality of this wetland site)
Other remarks (include personal comments about what adds to or de	etracts from the quality of this wetland site)
	etracts from the quality of this wetland site) Observation Point #1
Other remarks (include personal comments about what adds to or de	Observation Point #1 Roll/Photo number(s):
Other remarks (include personal comments about what adds to or de	Observation Point #1
Other remarks (include personal comments about what adds to or de 3b.2 Dominant Plant Species: Vegetation Zone C	Observation Point #1 Roll/Photo number(s):
Other remarks (include personal comments about what adds to or de 3b.2 Dominant Plant Species: Vegetation Zone C What percentage of the polygon does this vegetation zone occupy?	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the polygon)
Other remarks (include personal comments about what adds to or de 3b.2 Dominant Plant Species: Vegetation Zone C What percentage of the polygon does this vegetation zone occupy? 10-25% 25-50% 50-75% 75-90% Is there notable layering/stratification in this vegetation zone? Dominant Herbaceous Species (ie. Covering more than 10% of the a	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the polygon) >90% Yes No
Other remarks (include personal comments about what adds to or de 3b.2 Dominant Plant Species: Vegetation Zone C What percentage of the polygon does this vegetation zone occupy? 10-25% 25-50% 50-75% 75-90% Is there notable layering/stratification in this vegetation zone? Dominant Herbaceous Species (ie. Covering more than 10% of the a with an """ any species that form extensive monocultural patches):	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the polygon) >90% Yes No rea) listed in order of relative abundance (Mark
Other remarks (include personal comments about what adds to or de 3b.2 Dominant Plant Species: Vegetation Zone C What percentage of the polygon does this vegetation zone occupy? 10-25% 25-50% 50-75% 75-90% Is there notable layering/stratification in this vegetation zone? Dominant Herbaceous Species (ie. Covering more than 10% of the a with an """ any species that form extensive monocultural patches):	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the polygon) >90% Yes No rea) listed in order of relative abundance (Mark
Other remarks (include personal comments about what adds to or de 3b.2 Dominant Plant Species: Vegetation Zone C What percentage of the polygon does this vegetation zone occupy? 10-25% 25-50% 50-75% 75-90% Is there notable layering/stratification in this vegetation zone? Dominant Herbaceous Species (ie. Covering more than 10% of the a with an """ any species that form extensive monocultural patches):	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the polygon) >90% Yes No rea) listed in order of relative abundance (Mark
Other remarks (include personal comments about what adds to or de 3b.2 Dominant Plant Species: Vegetation Zone C What percentage of the polygon does this vegetation zone occupy? 10-25% 25-50% 50-75% 75-90% Is there notable layering/stratification in this vegetation zone? Dominant Herbaceous Species (ie. Covering more than 10% of the a with an """ any species that form extensive monocultural patches):	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the polygon) >90% Yes No
Other remarks (include personal comments about what adds to or de 3b.2 Dominant Plant Species: Vegetation Zone C What percentage of the polygon does this vegetation zone occupy? 10-25% 25-50% 50-75% 75-90% Is there notable layering/stratification in this vegetation zone? Dominant Herbaceous Species (ie. Covering more than 10% of the a with an "*" any species that form extensive monocultural patches): a b c d Dominant Shrub Species listed in order of relative abundance:	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the polygon)
Other remarks (include personal comments about what adds to or de 3b.2 Dominant Plant Species: Vegetation Zone C What percentage of the polygon does this vegetation zone occupy? 10-25% 25-50% 50-75% 75-90% Is there notable layering/stratification in this vegetation zone? Dominant Herbaceous Species (ie. Covering more than 10% of the a with an "*" any species that form extensive monocultural patches): a b c d Dominant Shrub Species listed in order of relative abundance:	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the polygon) >90% Yes No rea) listed in order of relative abundance (Mark
Other remarks (include personal comments about what adds to or de 3b.2 Dominant Plant Species: Vegetation Zone C What percentage of the polygon does this vegetation zone occupy? 10-25% 25-50% 50-75% 75-90% Is there notable layering/stratification in this vegetation zone? Dominant Herbaceous Species (ie. Covering more than 10% of the a with an "*" any species that form extensive monocultural patches): a b c d Dominant Shrub Species listed in order of relative abundance:	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the polygon)
Other remarks (include personal comments about what adds to or de 3b.2 Dominant Plant Species: Vegetation Zone C What percentage of the polygon does this vegetation zone occupy? 10-25% 25-50% 50-75% 75-90% Is there notable layering/stratification in this vegetation zone? Dominant Herbaceous Species (ie. Covering more than 10% of the a with an "*" any species that form extensive monocultural patches): a b c d Dominant Shrub Species listed in order of relative abundance: a b Dominant Tree Species listed in order of relative abundance: P=pole in the species in the species is set of the species abundance: P=pole in the species is set of the species abundance: P=pole in the species is set of the species abundance: P=pole in the species abundance:	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the polygon)

NWI Polygon ID) #:			Pi	roject #:
3b.2 Dominant	t Plant Species:	Vegetation Zone	C (cont'd)		
Tree and Shrub	_	separate, seldom touc	thing	often touching	more or less closed
Mature trees (>	12" dbh) present:	Yes] No		
Other remarks				detracts from the qu	uality of this wetland site)
3b.2 Dominant	Plant Species:	Vegetation Zone		Observation P	Point #1
				Roll/Photo num	nber(s):
What percentag	e of the polygon d	loes this vegetation	on zone occupy?	(Note: V-mark l	ocation on the polygon)
10-25%	25-50%	50-75	75-90%	☐ >90%	
Is there notable	layering/stratificat	ion in this vegetat	ion zone?	☐ Yes ☐	No
Dominant Herba with an "*" any s	aceous Species (i species that form e	e. Covering more extensive monocul	than 10% of the Itural patches):	area) listed in orde	r of relative abundance (Mar
	a			e	
	c			9	
Dominant Shrul	b Species listed in			h	
	b			d	
Dominant Tree	Species listed in o	order of relative ab	oundance: P=pole	e (3-12" dbh) and M	1=mature (>12" dbh)
	a b			cd	
Tree and Shrub	Canopy:				
☐ nil Mature trees (>	12" dbh) present:	separate, seldom touc	ching	often touching	more or less closed
Other remarks	(include personal	comments about	what adds to or o	detracts from the qu	uality of this wetland site)

Sec1-w31				
Common Name	Botanical Name	Indicator	FQA	notes
ilse-nettle	Boehmeria cylindrica	OBL	3	
swamp oval sedge	Carex muskingumensis	OBL	2	
arnyard grass	Echinochloa crusgalli	FACW	0	exotic
spike rush	Eleocharis	OBL	9	 -
ommon rush	Juncus effusus	OBL	3	
talse loosestrife	Ludwegia polycarpa	OBL	4	
uropean water milfoil	Myriophyllum spicatum	OBL	0	exotic/ dominant
reed canary grass	Phalaris arundinacea	FACW+	0	exotic
ack willow	Salix nigra	OBL	3	<u> </u>
bald cypress	Taxodium distichum	OBL	10	
ommon cattail	Typha latifolia	OBL	1	
total hydrophytic taxa observed			12	
verage of FQA (dominant wetland species only)			0	
number of indicator taxa			2	

1-69 Wetland Quality Assessment Profile

2/17/2006 Section 1 **W28** 08/25/05 0.216 acres

Date Report Generated:
Wetland site:
Data reference #
Date of site visit:
Total wetland area:

Wetland Impact #12

Polygon Information		
Polygon ID	0	
Polygon Size (acres)	0.072	
Wetland Community Type	SM	
Red Flag (Special) Indicators		
Special Hydrologic Conditions	Z	
Special Community Type	Z	
Rare-Threatened-Endangered Species	2	
Animal Habitat Measures		
Wetland size and connectivity	က	
Surrounding land use	സ	
Standing water	2	
Dead woody material		
Zonation and interspersion	ന	
Stratification	_	
Tree canopy		
Mature trees		
Animal Habitat Measure Score (min = 8, max = 24,	5	
Animal Habitat Measure Rating	fair	
Botanical Measures (all except exotics dependent upon community type)	уре)	
Number of dominant plant taxa observed	_	
Conservatism rating		
Total hydrophytic taxa observed		
Number of indicator taxa		
Exotic species rating	33	
Botanical Measure Score (min = 5, max = 15)	_	
Botanical Measure Rating	poor	
Hydrology Measures		
Water quality protection (= no. of yes answers)	വ	
Flood and storm water storage (= no. of yes answers)	2	
Site/Hydrology Score (min = 11, max = 33)		
Site/Hydrology Rating	fair	:

In-WRAP Summary Sheet

Date Report Generated: 8-30-05
Wetland site name: Sect—W28
Butta recipience w
NWI polygons in Site (quadrangle and NWI id. numbers):
TIER 1 SUMMARY:
a. Total wetland area (hectares): 0.1497 hectares (0.37 acres)
b. Wetland size and connectivity - contribution to animal habitat:
爲Valuable □ More Favorable □ Favorable □ Neutral
c. Surrounding land use - numerical rank (max. = 1): $\sqrt{\frac{1}{2}}$
d. Value surrounding area adds to animal habitat: 🗖 Valuable □ Favorable □ Low
TIER 2 SUMMARY NWI Polygon Id
a. Indiana Wetland community type: Shallow Moush
b. Standing water - contribution to animal habitat: □ Valuable 및 Favorable □ Neutral
c. Disturbances to site:
d. Exotic species rating: SGood □ Medium □ Poor
e. Special Hydrologic Conditions Observed:
f. Special Community Type:
g. Rare-Threatened-Endangered Species:
h. Polygon QualityDescriptor: □ Good DMedium □Poor
TIER 3A SUMMARY
a. Dead woody material as indicator of animal habitat: □ Valuable □ Favorable 以Neutral
b. Water quality protection - numerical rank (6 max.): 5 Rating: Good @Medium @Poor
c. Flood and storm water storage - numerical rank (5 max.): 2 Rating: □Good ØMedium □Poor
TIER 3B SUMMARY
a. Zonation and interspersion as indicator of animal habitat: XValuable 🛘 Favorable 🔻 Neutral
b. Stratification as indicator of animal habitat: □ Valuable ☑ Neutral
c. Number of dominant plant taxa observed: 2 Rating: Good Medium APoor
• • · · · · · · · · · · · · · · · · · ·
d. Average coefficient of conservatism:
f Mature trees as indicator of animal to the contract of animal to the
= · · · · · · · · · · · · · · · · · · ·
g. Total hydrophytic taxa observed: <u>\(\bar{\bar{\bar{\bar{\bar{\bar{\bar{</u>
n. Number of indicator taxa: 1 Rating: □ Good □ Medium 🗡 Poor

The state of the s		
Tier 1: Assessment Ove 1.1 Site Identification:	erview	1-W28
Project Site Name:	1-w28	
Ownership (if known):		
USGS Topgraphic Quadrangle	(s): Francisco	
USGS Watershed 14-digit HUC		
_	Inventory (NWI) Polygon within the project	t site (Polygon-specific data)
NWI Polygon ID #		
Cowardin Classification	POW-4-n	
Polygon Size (hectares)	0.1497	
1.2 Site Visit: Team Members:	1c & MWW	
Company/Agency:	FARIL	
Date Assessed: 8-25	(<u>)</u> Time: <u>3 0,,,</u> Weather (Conditions: 100 Change and and
<u> </u>	Veather Weather C	301010011s. 1101 5(11)114 90 3
recent heavy rains, an unusual	lly dry season, an especially early spring, e	etc.):
1.3 Wetland Size:	6 . 427	
Size of site being assessed:	0.1497 hectares = 023	t acres
Size of site being assessed: Size of total wetland complex (0.1497 hectores = 0.25 all contiguous wetland polygons):	t acres
Size of site being assessed: Size of total wetland complex (1.4 Site Setting:	all contiguous wetland polygons):	7 acres
Size of site being assessed: Size of total wetland complex (all contiguous wetland polygons):	t acres
Size of site being assessed: Size of total wetland complex (1.4 Site Setting: Degree of isolation from other Site is Site is Other	all contiguous wetland polygons):	n other wetlands
Size of site being assessed: Size of total wetland complex (1.4 Site Setting: Degree of isolation from other Site is Site is Other	all contiguous wetland polygons): wetland complexes: connected upstream and downstream with connected upstream with other channels connected downstream with other wetland wetlands are within 0.25 mile but not conn isolated	n other wetlands

Residential- single family

☐ Commercial or Multifamily Residential

NWI Polygon ID #:		Project #:
Tier 2 Individua	al Polygon: Preliminary Assess	sment (for each wetland polygon present on-site)
2.1 Wetland Geor	morphic Setting and Surface Water F	low:
	☐ Depressional ☐ Riverine (within the river/stream bage) ☐ Slope	Floodplain Anks) Lacustrine
2.2 Presence of S	Standing Water:	
Is standing water n	ormally present in the polygon?	☑ Yes □ No
	If yes, is the water greater than 2 met	ers in depth?
	Is standing water normally present in	an adjacent polygon?
2.3 Apparent Hyd	roperiod:	
	☑ Permanently Flooded☐ Seasonally Flooded☐ Saturated (surface water seldom p	Artificially Flooded Artificially Drained present)
2.4 Soil Type:		
	☐ Organic (ie. Peat, etc.) ☑ Mineral ☐ Both Mineral and Organic Present	
2.5 Wetland Com		ey to Wetland Communities of Indiana):
	SMILONI MANS	·
2.6 Disturbances	of Hydrology: None	
	☐ Ditching ☐ Tiles ☐ Dams	Road or Railroad Embankment Culvert Other Human Disturbances to the Hydrology Describe:
2.7 Presence of Ir	vasice Exotic Vegetation:	
	☐ Garlic Mustard ☐ Phragmites ☐ Purple Loosestrife	Glossy Buckthorn Reed Canary Grass Other Scattared List: See attached Inst.
2.8 Presence of S	pecial Hydrologic Conditions (ie. sec	eps, wet slopes, floating mats):
	n/a	
2.9 Presence of S	pecial Community Types: None	
☐ Bog	☐ Fen ☐ Wet Sand/ Muck Flats	or Marl Seeps
2.10 Presence of	Known Federal or Indiana Rare, Thre	eatened, or Endangered Species (RTES):
	None Observed or Known To Be F	
2.11 Wetland Poly	gon Quality Descriptor (see Wetland	Quality Descriptions , and check one below):
		Poor

NWI Polygon ID #:	Project #: <u>U30730 / 06</u>
Tier 3a Individu	al Polygon: Rapid Hydrology Indicators
3a.1 Notable Feat	ures That Influence Water Quality and Hydrology:
Estimated Woody I Amount of Dead W	us Plant Cover (%) in the Polygon:
, ,	(<5% cover) Scattered (5-15% cover) Frequent (>20% cover)
1. Yes No	The wetland has a significant amount of vegetative (specifically herbaceous and wood plants) density to potentially uptake dissolved nutrients.
2. Yes No	Managed Water (eg. Municipal or storm water drainage, agricultural drainage outlet, industrial or municipal wastewater) is not discharged into the wetland polygon.
If the wetland in qu 3a. ☐ Yes ☐ No	estion is a depressional wetland, respond to questions 3a. If not, answer 3b. The wetland has a shape or flow that allows for the settling out of suspended materials before the water reaches the center of the wetland.
3b.	The position of the wetland in the landscape is such that run-off is held or filtered before entering a surface body of water down-gradient.
4. Yes No	Within 100 meters of its borders, the wetland <i>lacks</i> steep slopes, large impervious areas, moderate slopes with row cropping, or areas of severe overgrazing.
5. XYes No	There are recreational lakes, fishable or navigable watercourses, or water supply sources downgradient in the local watershed.
6. Yes No	There is a vegetative buffer area (>15 meters wide), or another wetland polygon (areas where overland flow can be filtered) located upland and adjacent to the wetland polygon. If yes, describe the buffer area width and slope:
	Ave. buffer width (meters):
3a.2 Water Qualit	y Protection Questions:
If the wetland in qu 1a. ∏yes ☐ No	estion is a depressional wetland, answer 1a. If not, answer 1b. The wetland is surrounded by a buffer of natural vegetation (forested, old field, scrub) that will slow overland flow into the wetland.
1b. ⊠Yes □No	There is a significant of microtopography or vegetative density within the wetland to reduce the velocity of water leaving the wetland.
2. Yes No	The wetland <i>lacks</i> man-made structures that would speed the flow of water from the wetland (eg. tiles, culverts, ditches).
3. Yes No	The flood potential of the local watershed in which the wetland is located is high (history of flood damages).
4. Yes No	The wetland is located in a watershed in which the majority of the upland soils are clayey and impermeable, or bedrock is within two feet of the top of the soil profile.
5. ⊠Yes □ No	The wetland is located in a watershed in which there are highly modified conditions due to existing development. (e.g. >5% of area is row crop, commercial, or residential use)

NWI Polygon ID #:	Project #:
Tier 3b Individual Polygon: Rapid Vegetation Des	cription
3b.1 Zoning and Interspersion:	
1. How many vegetation zones are evident in this wetland polyg	gon?
1b. If only one vegetation zone is evident,	which best describes the site?
tussocks; heterogeneous te	saic of small vegetation patches, hummocks, or extures across the polygon gle vegetation type with more or less uniform texture
If more than one vegetation zone is present in the polygon, we the distribution of these zones?	which interspersion diagram most closely represents
☐ Type One Interspersion	☐ Type Two Interspersion
3b.2 Dominant Plant Species: Vegetation Zone A	Observation Point #1
	Roll/Photo number(s): (Note: V-mark location on the polygon)
What percentage of the polygon does this vegetation zone occu	
10-25%	% X>90%
Is there notable layering/stratification in this vegetation zone?	—
Dominant Herbaceous Species (ie. Covering more than 10% o with an "*" any species that form extensive monocultural patche	of the area) listed in order of relative about to account
a chinochna	
b salix	f
d	g h
Dominant Shrub Species listed in order of relative abundance:	
an/a	c
a <u>n/a</u> b	d
Dominant Tree Species listed in order of relative abundance: P	=pole (3-12" dbh) and M=mature (>12" dbh)
a //a b	c
Free and Shrub Canopy:	d
☐ separate, seldom touching	often touching more or less closed
Mature trees (>12" dbh) present: ☐ Yes ☒ No	
Other remarks (include personal comments about what adds to MAN made pand W/V	o or detracts from the quality of this wetland site)

NWI Polygon ID #:	Project #: <u>036736/06</u>
3b.2 Dominant Plant Species: Vegetation Zone B	Project #: <u>036736/06</u> Observation Point #1
	Roll/Photo number(s):
What percentage of the polygon does this vegetation zone	(Note: V-mark location on the polygon)
	5-90%
Is there notable layering/stratification in this vegetation zone	 .
Dominant Herbaceous Species (ie. Covering more than 10 with an "*" any species that form extensive monocultural pa	% of the area) listed in order of relative abundance (Mark
a	e
b c	e
d	g h
Dominant Shrub Species listed in order of relative abundar	
a	c
b	d
Dominant Tree Species listed in order of relative abundance	e: P=pole (3-12" dbh) and M=mature (>12" dbh)
ab	c
	<u> </u>
Trop and Charle Cononer	
Tree and Shrub Canopy:	
nil separate, seldom touching	often touching more or less closed
_	often touching more or less closed
nil separate, seldom touching	
nil separate, seldom touching Mature trees (>12" dbh) present: Yes No	
☐ nil ☐ separate, seldom touching Mature trees (>12" dbh) present: ☐ Yes ☐ No Other remarks (include personal comments about what ac	ds to or detracts from the quality of this wetland site)
☐ nil ☐ separate, seldom touching Mature trees (>12" dbh) present: ☐ Yes ☐ No Other remarks (include personal comments about what ac	ds to or detracts from the quality of this wetland site) Observation Point #1
□ nil □ separate, seldom touching Mature trees (>12" dbh) present: □ Yes □ No Other remarks (include personal comments about what accommendate seldom touching 3b.2 Dominant Plant Species: Vegetation Zone C	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the polygon)
□ nil □ separate, seldom touching Mature trees (>12" dbh) present: □ Yes □ No Other remarks (include personal comments about what accommendate seldom touching 3b.2 Dominant Plant Species: Vegetation Zone C	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the polygon)
□ nil □ separate, seldom touching Mature trees (>12" dbh) present: □ Yes □ No Other remarks (include personal comments about what accommendate seldom separate, seldom touching No Other remarks (include personal comments about what accommendate seldom separate, seldom touching No Other remarks (include personal comments about what accommendate seldom separate, seldom touching No Other remarks (include personal comments about what accommendate seldom separate, seldom touching No Other remarks (include personal comments about what accommendate seldom seld	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the polygon)
□ nil □ separate, seldom touching Mature trees (>12" dbh) present: □ Yes □ No Other remarks (include personal comments about what accommendate seldom separate, seldom touching No Other remarks (include personal comments about what accommendate seldom separate, seldom touching No Other remarks (include personal comments about what accommendate seldom separate, seldom touching No Other remarks (include personal comments about what accommendate seldom separate, seldom touching No Other remarks (include personal comments about what accommendate seldom seld	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the polygon) occupy?
□ nil □ separate, seldom touching Mature trees (>12" dbh) present: □ Yes □ No Other remarks (include personal comments about what accomments accomments about what accomments accomments about what accomments accomments accomment accomment accomment because the polygon does this vegetation accomment ac	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the polygon) occupy? 75-90% Pyes No Ownor of the area) listed in order of relative abundance (Mar
□ nil □ separate, seldom touching Mature trees (>12" dbh) present: □ Yes □ No Other remarks (include personal comments about what accommendate seldom sel	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the polygon) occupy? 75-90% Pyes No Ownor of the area) listed in order of relative abundance (Mar
□ nil □ separate, seldom touching Mature trees (>12" dbh) present: □ Yes □ No Other remarks (include personal comments about what acceptable and the polygon does this vegetation zone □ 10-25% □ 25-50% □ 50-75% □ 10-25% □ 10-	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the polygon) occupy? 75-90% Per Yes No 0% of the area) listed in order of relative abundance (Maratches):
□ nil □ separate, seldom touching Mature trees (>12" dbh) present: □ Yes □ No Other remarks (include personal comments about what acceptable and the polygon does this vegetation zone □ 10-25% □ 25-50% □ 50-75% □ 10-25% □ 10-	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the polygon) occupy? 75-90% Per Yes No 0% of the area) listed in order of relative abundance (Maratches):
□ nil □ separate, seldom touching Mature trees (>12" dbh) present: □ Yes □ No Other remarks (include personal comments about what acceptable and the polygon does this vegetation zone □ 10-25% □ 25-50% □ 50-75% □ 10-25% □ 10-	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the polygon) occupy? 75-90% Per Yes No 0% of the area) listed in order of relative abundance (Maratches):
□ nil □ separate, seldom touching Mature trees (>12" dbh) present: □ Yes □ No Other remarks (include personal comments about what acceptable and the polygon does this vegetation zone □ 10-25% □ 25-50% □ 50-75% □ 15 there notable layering/stratification in this vegetation zone Dominant Herbaceous Species (ie. Covering more than 16)	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the polygon) occupy? 75-90%
nil	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the polygon) occupy? 75-90%
nil	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the polygon) occupy? 75-90%
nil	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the polygon) occupy? 75-90%
Mature trees (>12" dbh) present:	Observation Point #1 Roll/Photo number(s): (Note: V-mark location on the polygon) occupy? 75-90%

NWI Polygon ID #: 3b.2 Dominant Plant Species: Vegetation Zone C (cont'd)		Project #:		
Tree and Shrub Canopy:				
nil separate, seldor	n touching	oft	en touching	more or less closed
Mature trees (>12" dbh) present: Yes	No			0
Other remarks (include personal comments a				ality of this wetland site)
3b.2 Dominant Plant Species: Vegetation 2			Observation P	oint #1
			Roll/Photo num	nber(s):ocation on the polygon)
What percentage of the polygon does this veg	etation zone oc	cupy?	(Note: V-mark I	ocation on the polygon)
☐ 10-25% ☐ 25-50% ☐ 50-759	% <u> </u>	0%	☐ >90%	
ls there notable layering/stratification in this ve	getation zone?		Yes	No
Dominant Herbaceous Species (ie. Covering a with an "*" any species that form extensive mo	nore than 10% nocultural patch	of the ar nes):	ea) listed in orde	r of relative abundance (Mark
a			e	
a b c			f	
d		!	9 h	
Dominant Shrub Species listed in order of rela	tive abundance			
a		,	C	
ab		•	d	
Dominant Tree Species listed in order of relative	ve abundance:	P=pole (3-12" dbh) and M	l=mature (>12" dbh)
a		, (c	
b		(d	
Tree and Shrub Canopy:				
nil separate, seldo	m touching	oft	en touching	more or less dosed
Mature trees (>12" dbh) present:	No		-	
Other remarks (include personal comments a	bout what adds	to or de	tracts from the qu	uality of this wettand site)

Sec1-w28		,		
Common Name	Botanical Name	Indicator	FQA	notes
common beggar's-ticks	Bidens frondosa	FACW	1	-
buttonbush	Cephalanthus occidentalis	OBL	5	
barnyard grass	Echinochloa crusgalli	FACW	0	dominant/ exotic
spikerush	Eleocharis spp.	OBL	9	
blunt spikerush	Eleocharis obtusa	OBL	1	
common rush	Juncus effusus	OBL	3	
european water milfoil	Myriophyllum spicatum	OBL	0	exotic
black willow	Salix nigra	OBL	3	dominant
blue vervain	Verbena hastata	FACW+	3	
			-	
total hydrophytic taxa observed			9	
average of FQA (dominant wetland species only)			1.5	
number of indicator taxa			1	

-

j

401 WQC APPLICATION ATTACHMENT #16 List of Adjacent Property Owners (Names and Addresses)

List of Adjacent Property Owner

List of Adjacent Property Owner		
Name: Allan A. & Mary Jo Adams	Name: Gerald L. & Helen C. Akin	
Address: 3316 Crossbow	Address: 2323 Orchard Road	
City: Evansville State: IN Zip Code: 47715	City: Evansville State: IN Zip Code: 47712	
Name: Marjorie Bertram, et al, Trust	Name: Jerry D. Besing	
Address: RR #2 Box 54	Address: 4626 S. Flanders Street	
City: Haubstadt State: IN Zip Code: 47639	City: Aurora State: CO Zip Code: 80015	
Name: Jerry R. Besing	Name: Larry & Judith Besing	
Address: RR #1 Box 297	Address: RR #2 Box 248	
City:Oakland City State: IN Zip Code:47660	City: Elberfeld State: IN Zip Code: 47613	
Name: Alan Blanchette	Name: Don Brewer	
Address: RR #2 Box 77	Address: RR #1 Box 50	
City: Haubstadt State: IN Zip Code: 47639	City:Oakland City State: IN Zip Code:47660	
Name: Donald M. & Mary Ann Claycomb	Name: Mitchell K. & Debra D. Cox	
Address: 11101 Park Road	Address: RR #2 Box 81	
City: Evansville State: IN Zip Code: 47725	City: Haubstadt State: IN Zip Code: 47639	
Name: Harold R. & Jo Ann Deputy	Name: Lawrence & Jackie Elderkin	
Address: RR #2	Address: 11800 SR 68	
City:Oakland City State: IN Zip Code:47660	City: Haubstadt State: IN Zip Code: 47639	
Name: Loretta Elpers, Trust	Name: John H. Erdell	
Address: 1308 Schroeder Road	Address: RR #1 Box 107	
City: Evansville State: IN Zip Code: 47725	City:Oakland City State: IN Zip Code:47660	
Name: Jerry Freudenberg	Name: Jack Freudenberg, Life Estate	
Address: 412 Roosevelt Avenue	Address: RR #2 Box 133	
City: Princeton State: IN Zip Code: 47670	City: Ft. Branch State: IN Zip Code: 47648	
Name: Edward A. Fuhs	Name: Nancy Gehlhausen	
Address: RR #2 Box 118A	Address: RR #3 Box 66	
City: Fort Branch State: IN Zip Code: 47648	City:Oakland City State: IN Zip Code:47660	

List of Aujacent FTC	<u> </u>
Name: Mildred Georges, Trust	Name: Barbara Gottfriedt Etal. C/O Rita Becker
Address: 106 Ben Street	Address: 358 S Woodard Rd
City: Haubstadt State: IN Zip Code: 47639	City: Salina State: KS Zip Code: 67401
Name: Brian & Kelli Griffith	Name: Larry Gullett
	3
Address: 11699 Wheatonville Road	Address: RR #1 Box 2 A
City: Elberfeld State: IN Zip Code: 47613	City: Francisco State: IN Zip Code: 47649
Name: Frederick W. & Frances Halwes, Trust	Name: Karl A. Halwes, Trust
Address: RR #2 Box 131	Address: RR #2 Box 134
City: Fort Branch State: IN Zip Code: 47648	City: Fort Branch State: IN Zip Code: 47648
Name: John B. & Diane F. Hasenour	Name: Michael J. Hasenour
Address: RR #2 Box 154 A	Address: RR #1 Box 128 B
City: Fort Branch State: IN Zip Code: 47648	City: Haubstadt State: IN Zip Code: 47639
Name: Robert Othmar Hasenour	Name: Scott Hasenour
Address: RR #2 Box 50	Address: RR #2 Box 52
City: Haubstadt State: IN Zip Code: 47639	City: Haubstadt State: IN Zip Code: 47639
	Name: Arlo & Wilma Heilman
Name: Raymond Hawkins	Name: Ano & winna Heinnan
Address DD #2 Doy 70	Address: 11055 W CD 60
Address: RR #2 Box 78	Address: 11955 W. SR 68
City Haybatedt State IN 7:n Code 47620	City Hawkstadt State IN 7in Code 17620
City: Haubstadt State: IN Zip Code: 47639 Name: Kenneth Heironimus	City: Haubstadt State: IN Zip Code: 47639 Name: Marvin E. Heldt
Name: Kenneth Heironimus	Name: Marvin E. Heidi
Address 220 W 7th Street	Address, 721 Negley Avenue
Address: 220 W 7th Street	Address: 721 Negley Avenue
City: Bicknell State: IN Zip Code: 47512	City: Evansville State: IN Zip Code: 47711
	Name: Henry J. & Chlo Hollander
Name: Oscar W. Highsmith	Name. Hemy J. & Chio Hohander
Address DD #2 Dov 152	Address DD #2 Doy 145
Address: RR #2 Box 152	Address: RR #2 Box 145
City: Fort Branch State: IN Zip Code: 47648	City: Ft. Branch State: IN Zip Code: 47648
Name: Henry R. Hollander	Name: Thomas Hood
Address: RR #2 Box 120 E	Address: RR #1 Box 182C
City: Fort Branch State: IN Zip Code: 47648	City:Oakland City State:IN Zip Code:47660

Name: James H. Hook	Name: William M. Hornby, Life Estate, et al
Address: RR #1 Box 181 B	Address: RR #2 Box 89
City:Oakland City State:IN Zip Code:47660	City: Haubstadt State: IN Zip Code: 47639
Name: Ricky J. & Charlotte Hulfachor	Name: Jarold M. & Elizabeth A. Hunt
Address: RR #1 Box 238	Address: 6339 Kratzville Road
City:Oakland City State:IN Zip Code:47660	City: Evansville State: IN Zip Code: 47710
Name: Robert V. Jacobs	Name: Koberstein Properties, Inc.
Address: 3311 Amy Drive	Address: RR #3 Box 363
City: Mt. Vernon State: IN Zip Code: 47620	City: Princeton State: IN Zip Code: 47670
Name: Tim Koelling	Name: Edgar A. Kuhlenschmidt, Trust
Address: RR #1 Box 182 AB	Address: 109 N. Ninth Avenue
City:Oakland City State:IN Zip Code:47660	City: Evansville State: IN Zip Code: 47712
Name: Darvin Lamey (Trust)	Name: Robbie A. & Karen Lee
Address: RR #2 Box 175	Address: RR 1Box 181
City: Haubstadt State: IN Zip Code: 47639	City:Oakland City State:IN Zip Code:47660
Name: Mrs. Richard Lefler	Name: Marlin F. Loehr
Address: RR #1 Box 329	Address: RR #1 Box 234C
City: Francisco State: IN Zip Code: 47649	City:Oakland City State:IN Zip Code:47660
Name: Joseph M. Logestan	Name: Larry Logestan
Address: RR #1 Box 182A	Address: RR #1 Box 184C
City:Oakland City State:IN Zip Code:47660	City:Oakland City State:IN Zip Code:47660
Name: Wilma Lee Maier	Name: Stephen Marvel
Address: RR #1 Box 182B	Address: RR #1 Box 319
City:Oakland City State:IN Zip Code:47660	City: Francisco State: IN Zip Code: 47649
Name: Michael B. McConnell	Name: James L. McDevitt
Address: RR #1 Box 127	Address: RR #1 Box 103
City: Francisco State: IN Zip Code: 47649	City:Oakland City State:IN Zip Code:47660

List of Adjacent Pro	perty Owners Cont.
Name: Mary Lou McKinney	Name: Arnold A. Michel (Trust)
Address: RR #1 Box 339	Address: 7295 S 200 E
City: Francisco State: IN Zip Code: 47649	City: Fort Branch State: IN Zip Code: 47648
Name: James A. Miller	Name: Sharon Kay Miller
Address: RR #1 Box 320	Address: 1506 Mary Lee Drive
City: Francisco State: IN Zip Code: 47649	City: Princeton State: IN Zip Code: 47670
Name: Steven Thomas Miller	Name: William A. Miller
Address: RR #1 Box 184C	Address: RR #1 Box 102A
City:Oakland City State:IN Zip Code:47660	City:Oakland City State:IN Zip Code:47660
Name: Tom & Tony Montgomery	Name: David H. Morgan
Address: RR #1 Box 183	Address: RR #1 Box 132A
City:Oakland City State:IN Zip Code:47660	City:Oakland City State:IN Zip Code:47660
Name: Dorothy P. Morgan (Trust)	Name: Naedine A. Morgan, Life Estate, et al
Address: 11 W. Fremont Avenue	Address: RR #1 Box 138
City: Littleton State: CO Zip Code: 80120	City:Oakland City State:IN Zip Code:47660
Name: Otto E. & Mary Frances Neyhouse	Name: Riley Osborne
Address: RR #1 Box 207	Address: RR #3 Box 9
City:Oakland City State:IN Zip Code:47660	City:Oakland City State:IN Zip Code:47660
Name: William A. Oxby	Name: Pauline M. Oxby, Trust
Address: 11099 SR 57	Address: RR #2 Box 47
City: Elberfeld State: IN Zip Code: 47613	City: Haubstadt State: IN Zip Code: 47639
Name: Glenn Parker, Trust	Name: Eugene L.& Susan Petitjean, Trust
Address: RR #2 Box 138	Address: RR #2 Box 43A
City: Fort Branch State: IN Zip Code: 47648	City: Haubstadt State: IN Zip Code: 47639
Name: Craig D. Pflug	Name: Don Pflug
Address: RR #1 Box 184 D	Address: RR #1 Box 214
City:Oakland City State:IN Zip Code:47660	City:Oakland City State:IN Zip Code:47660

List of Adjacent Property Owners Cont.		
Name: Gary W. & Judy A. Priest, Life Estate	Name: Gregory S. Reising	
Address: 10499 SR 57	Address: RR #2 Box 123-1AF	
City: Elberfeld State: IN Zip Code: 47613	City: Fort Branch State: IN Zip Code: 47648	
Name: Kenneth Ray, Marcia, & Pat Reising	Name: Mitzi A. Ricketts	
Address: RR #2 Box 125	Address: RR #1 Box 134	
City: Fort Branch State: IN Zip Code: 47648	City:Oakland City State:IN Zip Code:47660	
Name: Allen J. Riley	Name: Karen S. Riley	
Address: RR #1 Box 180 B	Address: RR #1 Box 321	
City:Oakland City State:IN Zip Code:47660	City: Francisco State: IN Zip Code: 47649	
Name: Alma Jean Schaefer	Name: Harold E. Schlottman	
Address: RR #2 Box 126-A	Address: 11615 Sawmill Drive	
City: Fort Branch State: IN Zip Code: 47648	City: Evansville State: IN Zip Code: 47725	
Name: Rick L. & Lois K. Schmitt	Name: Doris Schwiersch	
Address: RR #2 Box 36	Address: RR #2 Box 42	
City: Haubstadt State: IN Zip Code: 47639	City: Haubstadt State: IN Zip Code: 47639	
Name: Elmer O. Schwiersch	Name: Larry A. Schwiersch	
Address: RR #2 Box 156-A	Address: RR #2 Box 39B	
City: Haubstadt State: IN Zip Code: 47639	City: Haubstadt State: IN Zip Code: 47639	
Name: Jeffrey A. Sevier	Name: Esley Sisson	
Address: RR #1 Box 179	Address: RR #1 Box 236	
City:Oakland City State:IN Zip Code:47660	City:Oakland City State:IN Zip Code:47660	
Name: George Sydney Skelton, Life Estate	Name: Robert E. Southall, Sr.	
Address: 458 W. CR 475S	Address: 545 Overlook Drive	
City: Winslow State: IN Zip Code: 47598	City: North Palm Beach State: FL Zip Code:33408	
Name: Wayne Spindler	Name: Shirley Strickland	
Address: RR #2 Box 189	Address: RR #3 Box 114B	
City: Haubstadt State: IN Zip Code: 47639	City:Oakland City State:IN Zip Code:47660	

Dist of Aujacent 110	
Name: Jennifer A. Taylor, et al	Name: Leo F. Thompson
Address: P.O. Box 7	Address: RR #2 Box 123
City: Elberfeld State: IN Zip Code: 47613	City: Fort Branch State: IN Zip Code: 47648
Name: Robert F. Traylor, Trust	Name: John W. Wasson
1.00000 11.000000 11.0000	
Address: 321 West Jennings Street	Address: 11501 Blue Grass Road
City: Newburgh State: IN Zip Code: 47630	City: Evansville State: IN Zip Code: 47725
Name: Jerry E. & Myrna Weatherholt	Name: Darlene Williams
Trainer soily E. & Mytha Weatherhole	Traine: Buriene Williams
Address: RR #2 Box 75 W	Address: 102 Michael Lane
City: Haubstadt State: IN Zip Code: 47639	City: Royal Center State: IN Zip Code: 46978
Name: Dolores J. Ziliak	Name: Donald R. & Barbara Ziliak
Dololes S. Zilidik	Times Donald I. & Dallouid Elliun
Address: RR #2 Box 28B	Address: RR #2 Box 75 T
City: Fort Branch State: IN Zip Code: 47648	City: Haubstadt State: IN Zip Code: 47639
Name: Bernard Hasenour & Son Farms, Inc	Name: Kuhlenschmidt Farm Land Trust
Name. Demard Hasenour & Son Farms, Inc	Name. Rumenschindt Parm Land Trust
Address: RR #2 Box 154	Address: 105 N. Ninth St
City: Fort Branch State: IN Zip Code: 47648	City: Evansville State: IN Zip Code: 47712
Name: Morgan Family Trust	Name: Schurmeier Farms, Inc
Traine: Worgan Laminy Trust	Name. Schameler Lamis, me
Address: 11 W. Fremont Avenue	Address: RR #2 Box 130
City: Littleton State: CO Zip Code: 80120	City: Fort Branch State: IN Zip Code: 47648
Name: Southern Indiana Beagle Club	Name: Texas Eastern Trans Corp
Address: RR #4 Outer N. Embree	Address: P.O. Box 1642
City: Princeton State: IN Zip Code: 47670	City: Houston State: TX Zip Code: 77251
Name: Vincent Georges & Sons Farm, Inc	Name: Voelkel Farms, Inc
	,
Address: RR #2 Box 147	Address: RR #3 Box 151B
City: Fort Branch State: IN Zip Code: 47648	City:Oakland City State:IN Zip Code:47660
Name: Ziliak Farm, Inc	Name: Thomas G. & Patricia A. Hess
Address: RR #1 Box 117	Address: 5110 E SR 68
City:Haubstadt State:IN Zip Code:47639	City:Haubstadt State:IN Zip Code:47639

List of Adjacent Property Owners Cont.		
Name: Jeffrey W. Menke	Name: John E. & Susan J. Steckler	
Address: R 2 Box 51	Address: 10965 S 525 E	
City:Haubstadt State:IN Zip Code:47639	City:Haubstadt State:IN Zip Code:47639	
Name: Jerome T. & Glenda Elpers	Name: Tony Bittner	
Address: 5024 E SR 68	Address: P.O. Box 307	
City:Haubstadt State:IN Zip Code:47639	City: Ownesville State: IN Zip Code: 47665	
Name: Thelma M. Seib Trust	Name: William J. & Rita J. Hasenour	
Address: 524 W SR 68	Address: 5271 E Hasenour Dr	
City: Haubstadt State: IN Zip Code: 47639	City: Fort Branch State: IN Zip Code: 47648	
Name: Ross & Company	Name: Judith E. Hasenour	
Address: 7846 E SR 64	Address: R 1 Box 486	
City: Francisco State: IN Zip Code: 47649	City: Fort Branch State: IN Zip Code: 47648	
Name: Roy E. Freudenburg	Name: Rod & Kathleen Kates	
Address: 6966 S 650 E	Address: 7310 E SR 168	
City: Fort Branch State: IN Zip Code: 47648	City: Fort Branch State: IN Zip Code: 47648	
Name: Joseph K. & Amy K. Reising	Name: Robert A. & Inez D. Meeks	
Address: R 2 Box 123 A	Address: R 1 Box 109	
City: Fort Branch State: IN Zip Code: 47648	City:Oakland City State:IN Zip Code:47660	
Name: Vernon & Lucille Davis	Name: Michael L. & Wanda L. Houchin	
Address: R 1 Box 223 A	Address: R 1 Box 137	
City:Oakland City State:IN Zip Code:47660	City:Oakland City State:IN Zip Code:47660	
Name: Barbara S. Watkins	Name: Wendall J. & Debbie A. Bean	
Address: 8476 St. Rt. 181 N	Address: R 1 Box 131	
City: Bremen State: KY Zip Code: 42325	City:Oakland City State:IN Zip Code:47660	
Name: Eddie & Ruth Davis	Name: Don & Freda White	
Address: 2007 S 175 E	Address: R 1 Box 130	
City: Princeton State: IN Zip Code: 47670	City:Oakland City State:IN Zip Code:47660	

Name: Robbie A. & Karen Lee	Name: Dennis W. Jenkins
Address: R 1 Box 181	Address: R 3 Box 67 D
City:Oakland City State:IN Zip Code:47660	City:Oakland City State:IN Zip Code:47660
Name: Thomas H. & Betty McCleary	Name: James Buck
Address: R 1 Box 228	Address: R 1 Box 207 A
City:Oakland City State:IN Zip Code:47660	City:Oakland City State:IN Zip Code:47660
Name: Scott A. & Cara R. Lee	Name: Alvin L. & Sara J. Sisson
Address: R 1 Box 224	Address: 2464 S 950 E
City:Oakland City State:IN Zip Code:47660	City:Oakland City State:IN Zip Code:47660
Name: Dallas & Leetta Miller	Name: Henry R. & Lori A. Hollander
Address: 8724 E SR 64	Address: 6256 S 725 E
City:Oakland City State:IN Zip Code:47660	City: Fort Branch State: IN Zip Code: 47648